

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS

NEW ENGLAND CARPENTERS HEALTH
BENEFITS FUND, PIRELLI ARMSTRONG
RETIREE MEDICAL BENEFITS TRUST,
TEAMSTERS HEALTH & WELFARE FUND
OF PHILADELPHIA AND VICINITY,
PHILADELPHIA FEDERATION OF
TEACHERS HEALTH AND WELFARE FUND,
DISTRICT COUNCIL 37, AFSCME -
HEALTH & SECURITY PLAN; JUNE SWAN;
MAUREEN COWIE and BERNARD GORTER,

Plaintiffs,

v.

FIRST DATABANK, INC., a Missouri
corporation, and McKESSON CORPORATION,
a Delaware corporation,

Defendants.

Civil Action: 1:05-CV-11148-PBS

Judge Patti B. Saris

EXPERT DECLARATION OF ROBERT D. WILLIG

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EXPERT DECLARATION OF ROBERT D. WILLIG

October 15, 2007

I. INTRODUCTION AND SUMMARY OF CONCLUSIONS

1. I submitted an expert report in this matter on January 24, 2007 (“January 2007 Willig Report”).¹ My qualifications and experience are described in that report.² I also submitted a rebuttal expert declaration on May 7, 2007 (“May 2007 Willig Declaration”).³

2. Dr. Raymond S. Hartman submitted his original declaration in support of class certification on July 17, 2006. He updated that declaration on December 20, 2006 (“December 2006 Hartman Declaration”). Dr. Hartman then submitted a rebuttal declaration on March 19, 2007 (“March 2007 Hartman Declaration”). Plaintiffs have proposed two classes: (1) a consumer class consisting of individuals subject to a percentage co-payment based on AWP pursuant to a plan with a member of the Third-Party Payor (“TPP”) class during the class period, and (2) a TPP class consisting of TPPs whose payments on Appendix A drugs were based on AWP during the class period.⁴ The Court has certified the consumer class for liability and damages, and has certified the TPP class for liability and equitable relief. The Court has not

1. “Report of Robert D. Willig,” January 24, 2007. I understand that this report was submitted as Docket No. 193.

2. See the January 2007 Willig Report, ¶¶1-4 and Exhibit 1 of that report. Appendix 1 of this declaration contains a list of additional documents and data that I have relied on in producing this declaration.

3. “Rebuttal Expert Declaration of Robert D. Willig,” May 7, 2007. I understand that this report was submitted as Docket No. 249.

4. Plaintiffs’ Amended Motion for Class Certification, December 20, 2006, ¶2.

certified the TPP class for purposes of damages.⁵

3. On September 14, 2007, Dr. Hartman submitted a declaration (“September 2007 Hartman Declaration”) in which he implements his aggregate damages methodology and expresses his opinion that his model of aggregate damages for the TPP class should apply for all of plaintiffs’ proposed class period, August 1, 2001 – March 15, 2005.⁶ Dr. Hartman attempts to convince the Court to overturn its decision where the Court found that a TPP damage class could not be certified because, among other things, “Dr. Hartman’s methodology for calculating aggregate damages would lead to significant overstatement because it fails to consider key provisions in contracts that are renegotiated and renewed.”⁷ Dr. Hartman’s opinion is that the Court is wrong in this finding. My expert opinion is that the Court is correct in its opinion that Dr. Hartman’s aggregate damages methodology would lead to a significant overstatement of damages. In addition, Dr. Hartman’s proposed aggregate damages methodologies for time periods less than the full class period suffer from the same problem of overstatement.

4. The court left open whether Dr. Hartman could establish a “feasible” aggregate damages methodology that would overcome these problems. Specifically, the court stated that, “Dr. Hartman may submit an aggregate damage methodology which includes only those contracts in effect when the scheme took place and excludes reimbursements under contracts renegotiated in response to the increase. Another alternative would be to only include damages

5. New England Carpenters Health Benefits Fund, et al. v. First DataBank, Inc. and McKesson Corporation, United States District Court, District of Massachusetts, C.A. No. 05-11148-PBS, Memorandum and Order, August 27, 2007 (“Class Certification Order”), at 2.

6. Dr. Hartman also proposes a new additional class of uninsured cash payers who paid the usual and customary (U&C) price. September 2007 Hartman Report, at ¶10.

7. Class Certification Order, at 24.

for one year after the large increase in 2002 took effect.”⁸ My opinion is that he has not provided such a methodology, as discussed below in Section V.

5. Dr. Hartman presents two analyses to support his opinion.⁹ First, he contends that PBMs benefited from the alleged scheme and therefore had no incentive to pass on any information or any benefit to TPPs. As I discuss below in Section III, this position is invalid as a matter of economics. Unless PBMs operate in a market with no competition, which they do not, there will always be varied incentives for PBMs to offer lower prices to maintain TPP business and to win new TPP business. Therefore, while PBMs that benefit from the alleged scheme might prefer to keep the extra profits, competition among PBMs will dictate that some, if not all, PBMs will give back at least part, if not all of any additional benefit to TPPs.

6. Second, he presents as his “most important” new information a statistical analysis using IMS data that purports to show that there was no mitigation or “push-back” by any TPP of the impact of the increase in AWP/WAC ratio. Aside from various statistical and data issues, which I explain below in Section IV, that undermine Dr. Hartman’s conclusion, Dr. Hartman makes a fundamental error in interpretation of the IMS data he uses. Specifically, Dr. Hartman claims that the IMS data are based on “[t]he transactions [that] reflect claims paid by TPP and Medicaid and amounts paid by uninsured cash payers.”¹⁰ He is wrong. Because the data are based on a survey of pharmacies, the TPP transactions in the data reflect contractual terms between PBMs and retail pharmacies. Contrary to Dr. Hartman’s claim, the data do not show

8. Class Certification Order, at 25.

9. The remainder of the September 2007 Hartman Declaration is essentially a repeat of the arguments he put forth in his previous declarations. Therefore, the January 2007 Willig Report and the May 2007 Willig Declaration contain my conclusions regarding the remainder of Dr. Hartman’s arguments and opinions.

10. September 2007 Hartman Declaration, at ¶26.

what happened to contractual terms contained in contracts between PBMs and TPPs, nor do they show what TPPs paid for pharmaceutical products.

7. I have been asked by counsel for McKesson Corporation (“McKesson”) to reply to some of the opinions expressed by Dr. Hartman in the September 2007 Hartman Declaration bearing on the issue of class certification, Dr. Hartman’s arguments that the court was in error, and Dr. Hartman’s proposed alternative aggregate damages methodologies based on time periods less than the full class period. In addition, I have been asked to respond to certain opinions contained in the Expert Report of Kimberly P. McDonough (“McDonough Report”), plaintiffs’ expert on pharmacy benefits.¹¹ Nothing in the September 2007 Hartman Declaration or the McDonough Report causes me to change the substance of any opinion that I expressed in the January 2007 Willig Report or the May 2007 Willig Declaration.¹²

8. The conclusions that I express in this declaration can be summarized as follows:

- Dr. Hartman mischaracterizes my opinions regarding class certification by incorrectly claiming that my position is that the increase in the AWP/WAC ratio had zero impact on all class members. My opinion is that determination of impact and damages requires an individualized analysis. This opinion is supported by economic logic and the empirical evidence in this case.
- Dr. Hartman is incorrect in contending that there is no competition among PBMs. Further, if his argument were true that PBMs that are vertically integrated with mail order pharmacies were somehow able to retain excess profits received as a result of the alleged scheme, this would only raise an additional individual issue further undermining the validity of class certification.
- Dr. Hartman’s use of IMS data does not support his argument that there was no recoupment by TPPs. Evidence from the IMS data is consistent with the

11. Ms. McDonough apparently replaces plaintiffs’ original industry expert Susan Hayes who offered an expert opinion that agrees that discounts off AWP increased “because the spread between WAC and AWP has increased.” Deposition of Susan Hayes, October 26, 2006, at p. 221. I address Ms. McDonough’s claims in Appendix 2.

12. My failure to address any particular claim in either report should not be construed as agreement on my part with that claim.

proposition that PBMs were able to squeeze excess profits from pharmacies and the extent to which those excess profits were passed onto the TPPs is a factual issue not addressed in Dr. Hartman's report.

- In the January 2007 Willig Report and the May 2007 Willig Declaration, I understood the claim of harm to the consumer class to derive from co-insurance payments that were a percentage of the reimbursement paid by the TPP.¹³ Dr. Hartman addressed the consumer class using the same methodology as the TPP class. Therefore, I also assumed that impact and damages to the consumer class were derivative of impact and damages to the TPP class. Dr. Hartman and I agree that the same reasoning that led the Court to deny certification of damages for the TPP class applies equally to the consumer class.
- Dr. Hartman fails to meet the Court's invitation to propose a feasible aggregate damages methodology that does not overstate damages. In particular, Dr. Hartman provides no methodology for distinguishing TPP transactions under previously negotiated contracts from TPP transactions under contracts negotiated after the change in AWP/WAC ratios. Simply presenting damages on an annual basis does not address the shortcomings of his aggregate damages methodology because the problems present in his methodology over the 3.5 year class period are equally present when he uses the same methodology to calculate damages for one and two year periods. In sum, Dr. Hartman's one year and two year methodologies overstate aggregate damages.¹⁴

9. My conclusions are based on my experience and expertise as an economist and my review of documents and data. In producing this declaration, I have relied on documents and data listed in my previous reports in this case as well as the additional documents and data listed in Appendix 1 to this declaration. If additional materials are made available to me, I may modify or update my conclusions.

13. Dr. Hartman and Ms. McDonough apparently agree with this understanding. See September 2007 Hartman Declaration, at ¶12, and McDonough Report, at ¶21.

14. Dr. Hartman's one year and two year methodologies are actually 1.5 years and 2.5 years from the start of the class period in August 2001. Dr. Hartman also claims that his aggregate damages estimates can be computed on a monthly basis. As I explain below in Section V, this does not correct the problem that his methodology likely overstates damages for whatever period he chooses to use.

10. The remainder of this declaration is organized as follows. In Section II, I explain and show that Dr. Hartman has mischaracterized my opinions regarding class certification and that the Court is correct in its opinion that Dr. Hartman's formulaic aggregate damages model would lead to an overstatement of damages. In Section III, I address Dr. Hartman's theory that PBMs benefited from the alleged scheme and therefore colluded to keep information from TPPs and to avoid passing on some of the benefit to TPPs, and show that his theory does not make economic sense. In Section IV, I show that Dr. Hartman's statistical analysis does not support his conclusion that there was no market response to the change in the AWP/WAC ratio. In Section V, I discuss why Dr. Hartman's September 2007 Declaration does not provide an aggregate damage methodology as requested by the Court. Section VI summarizes my conclusions.

II. DR. HARTMAN MISCHARACTERIZES MY OPINIONS ON CLASS CERTIFICATION

11. Throughout the September 2007 Hartman Declaration, Dr. Hartman mischaracterizes my opinions in various ways. Most importantly, he incorrectly claims that my opinion is that the spread resulted in zero impact for all TPPs. For example, Dr. Hartman states, "[p]ut simply, Defendant's counsel and their Expert Dr. Willig conclude that *the 5% Scheme simply would not work, could not work and did not work* because all TPPs knew and 'pushed-back' against inflation induced by the Scheme."¹⁵ My opinion is not zero impact for all TPPs (which would be a damages opinion), but instead it is that the varied nature of market responses at the TPP level is precisely the reason why determination of impact and damages requires an individualized analysis. In dramatic contrast, it is Dr. Hartman's aggregate damages methodology that relies

15. September 2007 Hartman Declaration, at ¶17, (emphasis in original), and Attachment D, ¶3.

on the extreme assumption that there was “zero knowledge – zero mitigation.”¹⁶ While I show that Dr. Hartman’s extreme assumption is wrong and that his damage methodology is thus intrinsically inaccurate and biased, I do not make the opposite extreme assumption and I do not know how Dr. Hartman could have construed that I did.

12. I never concluded that there was zero impact of the change in AWP/WAC ratio. That is a damages question and I was never asked to offer an opinion on damages. Instead, I was asked to address issues related to class certification. I opined that determination of impact and damages requires an individualized analysis because of the evidence of the variety of TPP-specific responses to the increase in AWP resulting from the change in the AWP/WAC ratio.¹⁷ In addition, I concluded that Dr. Hartman’s aggregate damages methodology, which makes the extreme assumption of zero market response for all TPPs, cannot be proven and necessarily overstates damages. Thus it is surprising that Dr. Hartman plainly misrepresents my opinion to be one of zero impact for all TPPs in the context of his argument that the Court should resurrect his aggregate damages methodology.

13. The thrust of my opinions in the January 2007 Willig Report and the May 2007 Willig Declaration is that economic logic (and common sense) indicate that for many TPPs there would be partial or complete mitigation of potential harm from a change in AWP/WAC ratios. The empirical evidence cited in my reports supports the view that there are market responses to increases in AWP.¹⁸ The Court’s opinion apparently recognizes that Dr. Hartman’s extreme

16. The Court recognizes that Dr. Hartman’s methodology overstates damages. Class Certification Order, at p. 24. (“Dr. Hartman’s methodology for calculating aggregate damages would lead to a significant overstatement because it fails to consider key provisions in contracts that are renegotiated and renewed.”)

17. See, for example, January 2007 Willig Report, at ¶9, and May 2007 Willig Declaration, at ¶3.

18. See Appendix 3 for a summary of Dr. Hartman’s mischaracterizations of the evidence

assumption of zero market response for the duration of the class period leads to an overstatement of aggregate damages. In the remainder of this declaration, I address some of Dr. Hartman's mischaracterizations of my opinion and show that the September 2007 Hartman Declaration provides no new information that should alter the Court's decision regarding the lack of feasibility of his aggregate damages methodology.

III. DR. HARTMAN'S THEORY OF PBM COMPLICITY IS INCONSISTENT WITH ECONOMIC LOGIC AND ULTIMATELY BOLSTERS THE VIEW THAT DETERMINATION OF IMPACT AND DAMAGES REQUIRES INDIVIDUALIZED ANALYSIS

A. Perfect vs. Imperfect Competition

14. Dr. Hartman rejects the Court's statement that "[c]ompetition among PBMs for the business of TPPs is fierce."¹⁹ Instead, Dr. Hartman contends that PBMs benefited from the alleged scheme through their mail order and retail pharmacy businesses and, enabled by the lack of "fierce" competition, had no incentive to inform TPPs of the alleged scheme or to mitigate the impact upon them.²⁰ Dr. Hartman needs this new theory to support his position that there were no market responses to the change in the AWP/WAC ratio for the full class period.

15. Dr. Hartman's presentation asserts that PBM competition is not "fierce," and then proceeds under the presumption that there is no competition at all among PBMs. This presumption is invalid and inconsistent with economic logic because there is an extensive and frequently occupied middle ground between perfect competition and no competition. In economics, we call this middle ground "imperfect competition."²¹ Despite Dr. Hartman's

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presented in the January 2007 Willig Report and the May 2007 Willig Declaration.

19. Class Certification Order, at 4.

20. September 2007 Hartman Declaration, at ¶5.

21. See, for example, *A Course in Microeconomic Theory*, David M. Kreps, 1990, at p. 325

suggestions to the contrary, my opinions on the determination of class-wide impact and damages do not depend on the existence of perfect competition among PBMs. Perfect competition occurs when a large number of firms compete to sell a homogenous product. In that situation, competition tends to drive prices to marginal cost (*i.e.*, the additional cost to provide one more unit of output). Where a relatively small number of suppliers compete, or where the competing suppliers offer somewhat differentiated products, as in the case of PBMs here, competition is termed “imperfect,” but it may be highly significant nonetheless. In such common circumstances, prices can remain above marginal cost, while being significantly disciplined by the extant competition. In the opinion that Dr. Berndt presents to the Court in the AWP MDL, he agrees that the imperfect competition among PBMs for TPP business is “vigorous”.²² It is likewise my opinion that such competition is fierce and vigorous.

16. In fact, the existence of fierce and imperfect competition in the PBM business contributes to the need for individualized inquiries into impact on and damages to TPPs. Dr. Hartman contrasts the PBM markets with commodity markets where there is perfect competition and firms are “price takers.”²³ It is true that if there were perfect competition among PBMs, then

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(“Firms in [models of imperfect competition] have rivals, and the actions of their rivals affect how well they do. But, at the same time firms are not price takers; when they optimize, they take into account how their actions affect the prices they face both directly and, through possible reactions of their rivals, indirectly.”).

22. Dr. Berndt recognized that perfect competition was not necessary for there to be “vigorous” competition among PBMs. Berndt Report, AWP MDL, at ¶205 (“While competition among PBMs may not conform to the undergraduate microeconomics textbook example of a perfectly competitive market (in which all buyers are either fully or at least equally informed, and everyone is a price taker), federal regulatory authorities have concluded that PBM competition is ‘vigorous.’”).

23. September 2007 Hartman Declaration at Attachment E, ¶¶3-4.

there likely would be complete mitigation for all TPPs. But, as stressed above, that is not my opinion. Rather, my opinion is that PBM competition for TPP business occurs through bargaining relationships (a concept Dr. Hartman recognizes), and that the degree of mitigation depends on the information and relative bargaining power in each of those relationships.

17. This is so because while firms may seek to retain profit and not share information in order to increase the profit they make from a given client, firms in an imperfectly competitive market also have incentives to share information with clients and/or offer improved price terms in order to retain and attract clients and potential clients. As long as there is *any* competition among PBMs for TPP business, there are incentives for PBMs to pass profits from the increased AWP/WAC ratio through to at least some TPPs -- so as not to lose their business to other PBMs who may also offer to pass through some profits. In a situation with significant (which “fierce” certainly implies) imperfect competition and separate bargaining relationships, the strength of the incentive to pass profits through depends on the competitive position of the particular PBM, the size of the TPP, the options available to the TPP, the information possessed by that particular TPP, and other factors that depend on the specific PBM and TPP in question. Therefore, assessment of actual outcomes requires individualized analysis.

18. Dr. Hartman’s theory that PBMs would have withheld all knowledge of the alleged scheme and retained all excess revenue from TPPs requires the extreme and unsupported assumption of zero competition among PBMs for the business of each TPP.²⁴ This, in turn,

24. Apparently, Dr. Hartman has changed his opinion with respect to PBM competition and the implications of TPP knowledge of the scheme. In his testimony in the AWP MDL, Dr. Hartman states, “The spread must be increased secretly, because if such spreads were understood to exist, competitors would behave to eliminate them. ... If however, the TPPs discovered that the AWP that formed the basis of their reimbursement payments were artificially inflated and that the TPPs had not received a fair share of their rebates, they would substitute away from that PBM and perhaps that drug product.” Declaration of Raymond Hartman, September 3, 2004, Attachment C, p. 15. Dr. Hartman elaborated on this point in the deposition (at p. 83), if TPPs had known of the increased AWP/WAC

means that Dr. Hartman's theory of zero responses by the PBMs and/or TPPs to the alleged scheme necessarily fails.

B. Dr. Hartman's Theory That PBMs, Especially Those with Mail Order Pharmacies, Would Benefit From The Scheme and Retain All of the Profit Does Not Make Economic Sense

19. Dr. Hartman challenges the Court's view that competition among PBMs for TPP business is "fierce." He also challenges the views of the Court's expert in the AWP MDL matter, Dr. Berndt, on this subject.²⁵ His theory is that retail pharmacies are not the only beneficiaries of the alleged scheme, but that PBMs also benefit largely because many PBMs are vertically integrated into the pharmacy business either through ownership of mail order pharmacies or through joint ownership with retail pharmacies. Therefore, the increased margin earned by retail pharmacies resulting from the increased spread between AWP and WAC would also benefit vertically integrated PBMs. Under Dr. Hartman's theory, PBMs seeing increased profit in their mail order and retail pharmacy businesses have a disincentive to share information

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ratio, many would have said, "I'm not going to pay you AWP less 15. I'm going to negotiate more aggressively" and "there's going to be a heat-seeking missile that going to compete that away." Similarly, Rosaria Esperson from DC 37 testified at ¶8 of her March 15, 2007 declaration that if she had known about the alleged scheme, "DC 37 would have demanded that our reimbursement for pharmaceuticals provided to members of the Unions be reduced accordingly." This evidence is inconsistent with Dr. Hartman's theory of zero PBM competition and the ability of PBMs to retain excess profits from the alleged scheme.

25. September 2007 Hartman Declaration, at ¶38. ("On the one hand, PBMs (or their parent company) profited directly from the Scheme; revelation of the Scheme would eliminate those financial benefits. On the other hand, PBMs could exploit their newly acquired information (if they had it) with TPPs, thereby competing to increase their market position and share with the TPPs. This later result is espoused by Dr. Berndt and Dr. Willig. The evidence demonstrates that this latter assumption is too simplistic and did not occur in this case. This case is quite different than the AWP MDL matter.").

of the alleged scheme and mitigate the impact upon TPPs because such action would endanger the PBM profits earned from the alleged scheme.

20. As a matter of economics, Dr. Hartman's theory is incorrect in a market with imperfect competition. To illustrate why Dr. Hartman's theory is incorrect, consider the ten PBMs in 2005 identified by Dr. Hartman.²⁶ His theory is that five of these firms benefited from the alleged scheme due to vertical integration into the mail order or retail pharmacy businesses.²⁷ According to Dr. Hartman, these five firms could not have passed on information about the alleged scheme or its implications on AWP/WAC ratios to TPPs and could not have mitigated the impact of the alleged scheme because doing so would jeopardize the increased PBM profits from the alleged scheme. A glaring problem for Dr. Hartman's new theory is that it requires an agreement among the five PBMs not to mitigate increased TPP costs. That is, even if these PBM firms could benefit from a common action that would increase profit (*e.g.*, not sharing information about the alleged scheme or negotiating lower prices with TPPs), that common action would not be profitable without the cooperation of other PBM competitors.²⁸ In markets

26. September 2007 Hartman Declaration, Attachment E, Table E.1 at pp. 11-12. Despite Dr. Hartman's assertions that the PBM industry is highly concentrated and non-competitive, the "market shares" listed in Dr. Hartman's table for 2005 imply an HHI of 896, assuming that the unidentified fringe consists of seven firms each with three percent share. An HHI of 896 is within the range of an unconcentrated market according the FTC/DOJ Merger Guidelines, Horizontal Merger Guidelines, U.S. Department of Justice and the Federal Trade Commission, Issued: April 2, 1992, Revised: April 8, 1997, at 15. According to Dr. Hartman's data for 2002 the HHI is 785 for that year.

27. Dr. Hartman believes that the other five PBMs also benefited because their margins on TPP transactions are tied to AWP. As I explain below, Dr. Hartman's theory of pass-through implies that the other five PBMs likely received a further benefit from the increase in the AWP/WAC ratio because of PBM's ability to squeeze the increased margin from retail pharmacies. The implication that Dr. Hartman's theory of PBM complicity requires a conspiracy among PBMs is equally true whether the conspiracy involve just the five vertically integrated PBMs or all PBMs.

28. An example of the use of cooperation among competitors to avoid price competition is

with a relatively small number of competitors (oligopoly markets), there may be imperfect competition where firms compete but recognize that there is interdependence in their competitive actions. In such markets, equilibrium prices may be above marginal cost, but firms are still constrained by the competition (often fierce competition) from their rivals. Although each firm has an interest in increasing price, it cannot profitably do so unilaterally. Unilateral price increases would be defeated by customers switching to other competitors.

21. In the context of PBMs, with increased profit as a result of higher prices at the retail and/or mail order level, economic logic indicates that absent a conspiracy among them PBMs would have an incentive to pass on some or all of the benefit to TPPs depending on the level of competition for each TPP's business. Dr. Hartman's theory is that PBMs would not pass on any benefits from the alleged scheme or any knowledge of the increases in the AWP/WAC spreads to any TPP because doing so would eliminate the PBM's benefit from the alleged scheme. This theory of Dr. Hartman is illogical because even if each PBM would prefer to retain all benefits from the alleged scheme, it would still have an incentive on the margin to cut the effective reimbursement (for example by increasing discount, decreasing dispensing fee or increasing the rebate pass-through percentage) in order to retain the business of TPPs that can make a credible threat to switch to another PBM, or to attract the business of a TPP that had been served by another PBM. Moreover, absent conspiracy, no PBM can be certain that its rivals are not passing on some benefit (or information) to TPPs.

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the OPEC Cartel in which oil producing countries agree on quantity limitations and allocations. Dr. Hartman's implicit assumption is that, similarly, the PBMs cooperate to avoid competition that would erode the benefits that they obtain from the increased AWP/WAC ratio.

C. Dr. Hartman's Theory Implies that PBMs Squeezed Excess Profit out of Retail Pharmacies.

22. Dr. Hartman's theory that PBMs benefit from the alleged scheme is focused on vertically integrated PBMs that own mail order or retail pharmacies. His theory is that vertically integrated PBMs would receive increased reimbursements from TPPs through affiliated mail order and retail pharmacies. Dr. Hartman also asserts that all PBMs earn extra revenue as a result of the increase in AWP/WAC spreads because the margin the PBM earns on TPP purchases from unaffiliated pharmacies is based on AWP.²⁹ And, further, he asserts that PBMs will not pass this windfall on to TPP clients or tell TPP clients about the changes in the AWP/WAC spread because the PBMs will want to retain the extra margin.

23. Dr. Hartman's theory, however, also implies that PBMs likely had an additional benefit from the alleged scheme. They were able to squeeze some or all of the increased margin out of retail pharmacies.³⁰ To see this, consider Dr. Hartman's view on why PBM benefits are not passed on to TPPs. He contends that TPPs would not demand added concessions from PBMs because they would not know that PBM (and pharmacy) margins increased and because TPPs lack market power or leverage relative to PBMs.³¹ These constraints do not apply to PBMs in their interactions with retail pharmacies. PBMs knew of the increased margins at the retail level resulting from the increase in the AWP/WAC ratio and PBMs, to varying degrees, have market power relative to retail pharmacies. For these reasons, under Dr. Hartman's theory, it would

29. 2007 September Hartman Declaration, at, Attachment E, ¶¶10-11.

30. Indeed, Ms. McDonough's declaration confirms that PBMs were able to squeeze from pharmacies some of the benefit the pharmacies received as a result of the AWP/WAC increase. McDonough Report, at p. 13.

31. See, for example, September 2007 Hartman Declaration at Attachment E, at ¶¶13-14.

follow that PBMs squeezed some or all of the benefit from the increased AWP/WAC ratio out of retail pharmacies.³²

D. Dr. Hartman's Claim that there is Market Power among PBMs Creates an Individual Issue of Impact and Damages

24. The most important implication of Dr. Hartman's theory that PBMs benefit from the alleged scheme and that they have market power (*i.e.*, competition is not "fierce") is that his theory supports my position that PBMs' relationships with retail pharmacies and TPPs creates individual issues in determination of impact and damages. My view, which is consistent with Dr. Berndt's views in the AWP MDL, is that competition among PBMs for the business of TPPs is not perfect competition, but instead is imperfect and variable depending on TPPs' characteristics.³³ Some TPPs would have been in a position, due to such factors as size, knowledge and degree of vertical integration, to mitigate some or all of the impact of the increased AWP/WAC ratio. Other TPPs may not have been able to do so. This is why determination of impact and damages requires an individualized analysis.³⁴

25. Dr. Hartman's current view appears to have evolved from a position that PBMs were ignorant of the implications of the alleged scheme to a position in which PBMs are

32. Hartman discusses the negotiating leverage PBMs have over pharmacies in his September 2004 Declaration in the AWP MDL. He states that, "*PBMs are aware of the competitive strategies used by and the financial incentives offered by large and small retailers*" and further reports that, "[m]ost pharmacists report that PBMs have most of the negotiating power within these networks." "Declaration of Raymond S. Hartman in Support of Plaintiffs' Motion for Class Certification," AWP MDL, September 3, 2004 at ¶24 and FN 31 (emphasis in original). In addition, as I explain below in Section IV.C, my analysis of IMS, GE and Cigna data indicates that PBMs increased discounts in their reimbursement paid to retail pharmacies during the class period.

33. See Berndt Report, AWP MDL, at ¶¶205-207.

34. This is the view of the Court regarding TPP contracts that were not commenced prior to the beginning of the class period.

complicit in the alleged scheme.³⁵ This change in Dr. Hartman's view makes this case appear much more similar to the AWP MDL where individualized issues regarding damages led to denial of class certification. In both cases, the alleged scheme implies benefits to PBMs. In both cases, there is a question as to whether each PBM retained the full amount of its benefit or passed on some to its TPP clients through the complex relationship it has with each individual TPP. A further complication that creates an individualized issue is the presence of TPPs in the class that are vertically integrated into the PBM and mail-order pharmacy function.³⁶ As Dr. Berndt said in his report for the AWP MDL: "Even if Plaintiffs' argument concerning lack of competition among PBMs were true, to the extent they owned and operated their own PBMs (and recall that the ownership structure of the PBMs has been and continues to be very diverse), third party payors would seem to me to have benefited from the allegedly fraudulent AWP scheme, and thus they would appear to face conflicts as member of the proposed class."³⁷ In the AWP MDL, Dr. Berndt is talking about a different alleged conspiracy, but the logic holds in this case as well.

35. See, for example, "I find no evidence in discovery materials or in the public press that indicates or even suggests that other PBMs and TPPs knew of or acted upon knowledge of the 5% Scheme." March 2007 Hartman Declaration at p. 2 and September 2007 Hartman Declaration at ¶15: "Since the largest PBMs are formally affiliated with significant mail-order and/or retail pharmacy lines of business, those PBMs (that is, their parent corporations) benefited immediately and substantially ('more than 3 times the profit as before') from the Scheme." (emphasis omitted).

36. Examples of vertically integrated TPP/PBMs with mail order and/or retail pharmacies include Wellpoint Inc./Anthem Prescription Management, which owns various Blue Cross/Blue Shield businesses; Prescription Solutions, which is owned by UnitedHealth Group (UnitedHealthcare); and Rx Prime, which is owned by Cigna. See, September 2007 Hartman Declaration, Table E.1.

37. Berndt Report, AWP MDL, at ¶¶210.

E. Dr. Hartman's Theory that PBM Revenue from TPPs is a Small, and therefore Inconsequential, Part of Overall PBM Revenues is Misleading

26. Here, as in the AWP MDL,³⁸ Dr. Hartman claims a principal-agent argument that PBMs would not pass on benefits from the alleged scheme to TPPs because Dr. Hartman claims that the profits from the TPP business are small relative to the profit from the PBM's mail-order and retail pharmacy businesses.³⁹ Dr. Hartman supports his claim that the TPP business is small relative to mail order and retail pharmacy with pie charts showing the breakdown of Medco's and ESI's revenue sources. Dr. Hartman's pie charts show that Medco's revenue breakdown in 2005 is 37.0 percent mail order, 61.9 percent retail product, 0.5 percent manufacturer services and 0.6 percent client/other services; and ESI's revenue breakdown in 2005 is 35 percent mail order, 64 percent network and one percent service.⁴⁰ Dr. Hartman assumes that the TPP competition occurs only over the administrative fees which he assumes are captured in the service category (0.6 percent for Medco and one percent for ESI).

27. The error made by Dr. Hartman is failing to recognize that the other non-service categories, including mail order, also capture revenues earned from sales to TPP clients. Medco and ESI annual reports show that the non-service revenue categories include revenue earned on the spread between what is received from TPPs and what is paid to pharmacies. For example, the Medco Annual Report for 2005 states,

Our net revenues are comprised primarily of product net revenues and are derived from the sale of prescription drugs through our networks of contractually affiliated retail

38. See, for example, Declaration of Raymond S. Hartman in Support of Plaintiffs' Motion for Class Certification, *in re Pharmaceutical Industry Average Wholesale Price Litigation*, September 3, 2004, at ¶14

39. September 2007 Hartman Declaration, Attachment D, ¶33. Dr. Hartman fails to explain how this principal-agent problem applies to PBMs that are not vertically integrated into the mail order or retail pharmacy business.

40. September 2007 Hartman Declaration, Attachment E, Figures E.1 and E.2, at pp. 16-17.

pharmacies and through our mail order pharmacies and are recorded net of certain discounts, rebates and guarantees payable to clients. ... Service revenues consist principally of administrative fees and clinical program fees earned from clients and other non-product related revenues, sales of prescription services and data to pharmaceutical manufacturers and other parties, and performance-oriented fees paid by specialty pharmacy manufacturers. ... Cost of revenues is comprised primarily of cost of product net revenues and is principally attributable to the dispensing of prescription drugs. Cost of product net revenues for prescriptions dispensed through our network of retail pharmacies includes the contractual cost of drugs dispensed by, and professional fees paid to, retail pharmacies in the networks. Our cost of product net revenues relating to drugs dispensed by our mail order pharmacies consists primarily of the cost of inventory dispensed and our costs incurred to process and dispense the prescriptions, including the associated fixed asset depreciation.⁴¹

28. To be sure, the Medco Annual Report shows that the bulk of its revenue may have been positively affected by the alleged scheme (either through squeezing the retail pharmacies or via sales through their own mail order business). But the fact is that Medco's revenue also depends on the overall volume of TPP business. The PBMs have an incentive to reduce prices to TPPs either to protect existing business that is threatened by other PBMs or to try to gain new business from other TPPs so long as the incremental margin on each sale to a TPP is increased. This is inconsistent with Dr. Hartman's theory of PBMs successfully hoarding any excess profits earned by the alleged scheme. That Medco's revenue depends so heavily on revenues made from pharmaceutical sales to TPPs, including mail order sales, reinforces Medco's incentive to increase its overall volume of TPP sales, potentially by offering up some of its windfall from the alleged scheme to TPPs in the form of lower prices.

IV. DR. HARTMAN'S STATISTICAL ANALYSIS DOES NOT SUPPORT HIS CONCLUSION OF NO MARKET RESPONSE.

29. Dr. Hartman supports his opinion that the Court should accept his aggregate damages methodology with a statistical analysis that uses IMS data to test the hypothesis that the

41. Medco Annual Report, 2005, at 19.

relationship between the amount paid by TPPs for drugs and the AWP remained unchanged following the increase in the AWP/WAC ratio vs. the alternative that there was “push-back” indicated by a decline in actual TPP payments relative to AWP. There are a number of conceptual, statistical and data problems with Dr. Hartman’s analysis that render it meaningless for determining whether there was a market response by TPPs to the increase in AWP/WAC ratio. First of all, Dr. Hartman relies on IMS data that reflect PBM payments to retail pharmacies, not TPP payments to PBMs, as Dr. Hartman contends.

30. Even assuming that Dr. Hartman is correct that the IMS data reflect TPP payments, his conclusion that his statistical analysis proves no “push-back” is still incorrect. Dr. Hartman’s error results primarily from the fact that his IMS data commingle private insurance transactions with Medicaid and cash customer transactions and appear to be based on data that include a substantial portion of invalid observations. These characteristics of the data have the effect of diluting any measure of market response to the change in the AWP/WAC ratios. Replication of Dr. Hartman’s analysis using TPP data from GE Group Life Assurance Company (“GE”) and Cigna, which do not have these diluting characteristics and do measure TPP and not PBM payments, provides results that are consistent with a substantial market response by TPPs. Finally, I address some of Dr. Hartman’s mischaracterizations of my econometric analysis presented in the May 2007 Willig Declaration.

A. Dr. Hartman’s Claim That IMS Data Show TPP Payments to PBMs is an Error

31. A fundamental error in Dr. Hartman’s use of the IMS data is that it relies on survey data that capture transactions at the retail pharmacy level. Therefore, the prices reported by IMS are those paid by the PBM to the pharmacy and do not measure TPP reimbursements. Accordingly, Dr. Hartman misinterprets the results of his analysis because the IMS data do not

capture changes in discounts and dispensing fees in the contracts between PBMs and TPPs. Dr. Hartman makes the following claim about his data:

My data allows (sic) me to test this hypothesis in the real world. The data I use for my analysis are micro data, that is, data based upon individual real-world transactions or summaries of individual transactions. The transactions reflect claims paid by TPPs and Medicaid and amounts paid by uninsured cash payers. Such data are understood to produce more accurate descriptions of market realities. (footnote omitted) The source for my data on drug reimbursements is one of the most comprehensive surveys of reimbursement paid by TPPs, uninsured cash payers and Medicaid – the National Prescription Audit (NPA) of IMS.⁴²

32. The fact is that the IMS NPA data are based on a survey of retail pharmacies, not a survey of TPPs or PBMs. Therefore, the TPP transactions in the data do not reflect “reimbursement paid by TPPs,” or even the contractual terms between PBMs and TPPs. Instead, these data survey the contractual terms between PBMs and retail pharmacies.⁴³ The data are silent on what happens to parameters in contracts between PBMs and TPPs. For this reason, the data provide no basis for Dr. Hartman to draw any conclusions about what happened to PBM/TPP contracts, or ultimate prices paid by TPPs, as a result of the alleged scheme.

33. While Dr. Hartman’s IMS data are irrelevant to the question of whether TPPs were able to mitigate the effects of the alleged scheme, these data are relevant to my proposition that PBMs were able to squeeze the retail pharmacies following the alleged scheme to extract lower prices. In fact, given the evidence of squeeze of the retailers by PBMs, Dr. Hartman should have expected that his statistical analysis would generate results consistent with a market response on the part of PBMs. When Dr. Hartman failed to generate such results, it should have

42. September 2007 Hartman Declaration, at ¶26.

43. The PBM/pharmacy contract terms are identical to PBM/TPP contracts only in the cases where the TPP has a “pass-through” contract with the PBM.

raised a red flag to him that there is either something wrong with his statistical analysis, something wrong with his data, or both. There are a number of limitations of Dr. Hartman's analysis and data, which I discuss below. However, as I discuss in Section IV.C, when properly analyzed, Dr. Hartman's IMS data show evidence of a PBM squeeze on pharmacies following the alleged scheme, which is consistent with my opinions, those of Ms. McDonough and some of the implications of Dr. Hartman's theories.

B. Even If the IMS Data Had Shown TPP Payments to PBMs, Dr. Hartman's Statistical Analysis is Erroneous

34. As I explained in the previous section, IMS data do not reflect the discounts and dispensing fees contracted between PBMs and TPPs. Assuming that the IMS data do reflect TPP payments (for purposes of my analysis), I now address why Dr. Hartman's analysis would still be incorrect. First, I show that by focusing on potential changes in the amount paid to pharmacies, which captures the discount off AWP (d) and the dispensing fee (df), Dr. Hartman's analysis, even if it measured TPP reimbursements to PBMs, would ignore the number and variety of market responses that I identified in the January 2007 Willig Report and the May 2007 Willig Declaration. Second, Dr. Hartman does not provide a meaningful statistical test of the question of whether there is an overall change in discounts and dispensing fees paid by PBMs in his data. Indeed, his data indicate that there is an overall decline in the ratio of net reimbursement (AA) over AWP. Third, Dr. Hartman's relies on IMS data that aggregate over three payer groups in the IMS data (Private Insurance, Medicaid, and Cash), and appear to be based on a survey of retailers in which a substantial portion of pharmacy respondents list the AWP value rather than the net reimbursement they actually receive.⁴⁴ These limitations of the

44. IMS refers to the "Private Insurance" payer group as "TPP" in its data. These transactions do not represent claims dollars (or prices) paid by TPPs. These claims represent the claims dollars (and prices) for transactions where the pharmacy was paid by a private party other than the consumer (most likely the PBM). To avoid confusion with plaintiffs,

data dilute the measurement of Dr. Hartman's AA/AWP ratio, making his conclusions about the change in this measure suspect.

i. Market Responses take on a Number of Forms and Are Not Limited to Changes in the Discount off AWP.

35. Dr. Hartman's analysis, if it measured TPP reimbursements, would require that any market response to the alleged scheme be limited to two contractual parameters, the discount (d) and the dispensing fee (df), because that is all that the IMS data, which measure payments to pharmacies, would capture. In the January 2007 Willig Report and the May 2007 Willig Declaration I showed that market responses to AWP inflation occur in a number of dimensions and that the mix of these dimensions varies in complex ways across TPPs. In particular, I identified a number of ways in which market responses could arise, including changes in discounts off AWP, changes in dispensing fees, changes in administrative fees and changes in the rebate pass-through percentage.⁴⁵

36. As Dr. Berndt noted, TPPs' choices of pricing concession through discounts off AWP versus rebate pass-through percentages reflect differences in the TPP willingness to bear risk.⁴⁶ ESI's discussion of its contracting with TPP clients indicates a similar trade off between contract terms:

We consult with our clients to assist them in selecting plan design features that balance the client's requirements for cost control with member convenience. For example, some clients receive a smaller discount on pricing in the retail pharmacy network or home delivery pharmacy in exchange for receiving all or a larger share of the pharmaceutical

(...continued)

I will refer to this category of payers in the IMS data as "Private Insurance."

45. January 2007 Willig Report, at ¶¶48-50, 80-89, 93-99, 101-104, and May 2007 Willig Declaration, at ¶¶32-37.

46. Berndt Report, AWP MDL, at ¶159.

manufacturer rebates. Other clients receive a greater discount on pricing at the retail pharmacy network or home delivery pharmacy in exchange for a smaller share of the pharmaceutical manufacturer rebates.⁴⁷

37. The point of my analysis is that market responses are complex and will vary across TPPs depending on the nature of each TPP/PBM relationship. Dr. Hartman cannot perform a statistical analysis that is limited to evidence measuring only two of the possible market responses (discount and dispensing fee) and validly conclude that he does not find evidence of a “push-back.” Dr. Hartman’s analysis does not address the ultimate question of whether some or all TPPs were able to mitigate the impact of the alleged scheme through market responses and would not address this question even if his data measured TPP reimbursements.

ii. Dr. Hartman’s Regression Analyses Do Not Speak to the Need for Individuated Analyses.

38. Dr. Hartman’s statistical analysis, at best, measures the average time trend in average payment percentages ($APP = AA/AWP$) across NDCs. As a general matter, regression analyses are designed to predict the averages of statistical variables, not the full distributions.⁴⁸ A finding that the average change in APP is small does not rule out the possibility that many TPPs responded by negotiating new APPs. Hence, such a finding would be consistent with my evidence that many TPPs reacted to the increase in AWP by negotiating new contract terms.

39. Nothing in Dr. Hartman’s statistical analysis of this type of data would permit such analyses of damages for individual TPPs. This would require data on APPs over time for individual TPPs, which are not available from the IMS data that Dr. Hartman utilizes. Beyond that, it would require a determination of what portion of the changes in APP would not have

47. ESI 10-K for fiscal year ending Dec. 31, 2005, at, p. 4.

48. There are “quantile regression” techniques, designed to provide information about parts of the distribution other than the mean, but Dr. Hartman utilizes simple mean regression.

occurred *but for* the change in the AWP/WAC ratio. As Dr. Hartman correctly points out “...prices are determined by the underlying economic, institutional, technological, and scientific facts and forces explaining demand, supply, and changes in demand and supply.”⁴⁹ In the case of individual negotiations between TPPs, PBMs and retail pharmacies, this necessitates analyses of those facts and forces for each individual TPP, in order to compare how much the APP actually changed for that TPP versus how much it would have changed but for the AWP/WAC ratio increase. This is why one cannot rely on the simple algebraic formula that Dr. Hartman proposes to determine damages, but rather must conduct individualized economic analyses of the circumstances surrounding each TPP and its contracts with PBMs and retail pharmacies.

iii. Dr. Hartman Misinterprets His Results Because of Limitations in the IMS Data He Uses.

40. There are two additional limitations of the IMS data, one of which Dr. Hartman is aware of but fails to consider when interpreting his results. First, the IMS data used by Dr. Hartman aggregate sales transactions over three types of payers (Private Insurance, Medicaid, and Cash), which Dr. Hartman acknowledges.⁵⁰ The problem is that Dr. Hartman’s hypothesis is that TPPs failed to “push-back” on PBMs through increased discounts and/or decreased dispensing fees. However, the Private Insurance transactions in the IMS data, in addition to measuring PBM payments not TPP payments, also represent only 78.8 percent of the transactions underlying the IMS data.⁵¹ The other 21.2 percent of transactions represent sales to Medicaid and uninsured cash customers. Under Dr. Hartman’s theory, there is no expectation

49. September 2007 Hartman Declaration, Attachment F, at ¶44.

50. September 2007 Hartman Declaration, at ¶26.

51. Medicaid represents 11.9 percent and cash transactions represent 9.3 percent. These figures, presented by Dr. Hartman, come from Novartis Pharmacy Benefit Report: Facts& Figures, 2004 edition, Figure 1: Retail Market Shares by Payer Type: 2003, p. 23.

that Medicaid transactions and cash transactions would exhibit a push-back similar to that of TPPs. Therefore the results of Dr. Hartman's analysis, which he attributes to a lack of "push-back" by TPPs, are really based on averages over all three types of payers when only one payer should be relevant.

41. Another potential limitation of the data that has implications for Dr. Hartman's interpretation of his results is misreporting of net reimbursement in the IMS data. Dr. Hartman's IMS data are derived from IMS' NPA survey. The survey attempts to measure net reimbursement (discounted AWP plus dispensing fee) paid to the retail pharmacy. The problem is that in IMS' standard NPA survey data, approximately 30 percent of volume is based on data received from pharmacies that report AWP rather than true net reimbursement. For those 30 percent, the reported value will necessarily increase with AWP and thus show no push-back, simply due to data reporting conventions, with no reflection on whether there was push-back in actual reimbursements.⁵² Dr. Hartman does not report whether the NPA data that he uses is IMS' standard NPA survey data.⁵³

42. These data limitations imply that any actual drop in AA relative to AWP that exists in the properly measured transactions may be diluted or masked by the improperly measured reimbursements. That is, the observed ratio of AA/AWP in Dr. Hartman's monthly data include multiple claims observations of one ($AWP/AWP = 1$). This may lead to an incorrect finding of no decline in the ratio AA/AWP when there in fact was a decline in the ratio

52. My understanding of the misreporting of net reimbursement is based on conversations with IMS. IMS tracks which pharmacy respondents provide AWP rather than net reimbursement and estimates the effect on its aggregate measures of net reimbursement.

53. Given that Dr. Hartman's IMS data commingle observations from Private Insurance with Medicaid and cash customers, it is likely that Dr. Hartman is using the standard NPA survey data and not a specially ordered data set from IMS that excludes data based on retail pharmacies that report AWP rather than net reimbursement.

AA/AWP. Therefore, Dr. Hartman's results may be biased toward a finding of no change in the AA/AWP ratio. As I explain below in Section IV.C and Appendix 4, replication of Dr. Hartman's analysis using data from GE and Cigna that are not diluted with Medicaid transactions, cash customer transactions and misreporting yields results that contradict Dr. Hartman's conclusion that there was no market response to the change in AWP/WAC ratio.

iv. Dr. Hartman's Statistical Analysis of Trends in Average APP is Flawed and Does Show Evidence of PBM Squeeze Following the AWP/WAC Ratio Change When Appropriately Considered.

43. In addition to the biases in Dr. Hartman's analysis caused by the limitations of his IMS data, there are also problems with the methodology of Dr. Hartman's statistical analysis. In particular, Dr. Hartman relies on individual tests of statistical significance for each drug to conclude that there is no evidence of "push-back." However, for the question whether in aggregate there is evidence of "push-back" across all self-administered prescription drugs, an appropriate statistical test is a single test of the overall change in the AA/AWP ratio across all drugs. Although Dr. Hartman's data show a statistically significant drop in the overall AA/AWP ratio, Dr. Hartman ignores this result in his analysis. Indeed, Dr. Hartman's data show evidence of PBM squeeze because those data reflect PBM payments to retail pharmacies. This is further confirmation of Ms. McDonough's position and mine that PBMs did, in fact, squeeze pharmacies.

44. Dr. Hartman bases his claim that there is no evidence of "push-back" by TPPs on the fact that, for many individual drugs, the time trend in APP is not statistically significantly different from zero (often referred to as finding that the trend is "insignificant"). To evaluate this claim, it is important to be clear about the meaning of statistical insignificance. It does not mean that there is any statistical evidence that the time trend is actually zero. Instead, it means that the analyzed data sample does not have sufficient information to distinguish the value from

zero, or from a range of both negative and positive values around zero. That is, insignificance is not a conclusive statement about the direction of the trend, but rather simply says that this particular sample is not informative about the direction of the trend, while a larger sample may well be informative.

45. One way to obtain a larger sample would be to pool the observations across drugs to estimate the average time trend. That is, Dr. Hartman is attempting to pin down a separate time trend for each of the 278 drugs he evaluates. In so doing, he has only 41 observations (months from July 2001 through November 2004) per drug. Pooling the observations yields $41 \times 278 = 11,398$ observations on the average time trend across drugs.

46. Dr. Hartman argues that he has to evaluate drugs separately because drugs may have different time trends. However, even if drugs have different time trends, the appropriate model depends on the question being asked. If one is interested in evaluating the single time trend that best represents the combined time trends of the full set of drugs, then the appropriate model is to pool the observations to determine the average time trend.⁵⁴ If, however, one is interested in testing for differences across the time trends, then separate time trends must be estimated. The challenge of identifying 278 separate time trends using 41 observations per drug – the challenge that Dr. Hartman undertakes – leaves less information in the sample with which

54. In particular, running a single regression with all observations yields the “best linear predictor” of the average trend in APP across all drugs. For more discussion of this, see Goldberger, *A Course in Econometrics*, 1991, pp. 52-3. Dr. Hartman clearly recognizes the fact that observations can be pooled to estimate a single time trend. It is unlikely that he believes the time trend for any given drug is the same for the entire period from July 2001-November 2004. The early portion of this period is before the increase in AWP/WAC ratio, when we would expect no change in APP. And Dr. Hartman notes that there are dips and spikes in APP corresponding to changes in WAC and AWP. By pooling together the observations across all these months, he is estimating a single time trend combining all those months, just as pooling together the observations across drugs would estimate a combined time trend across drugs.

to estimate each individual time trend and thus is more likely to lead to statistically insignificant results.

47. While Dr. Hartman chooses to undertake this harder statistical challenge, the simpler combined trend across drugs is a relevant summary measure. Since evaluation of total TPP damages is across all drugs, the ultimate goal of analysis is to determine if TPPs “pushed-back” any of the increases in the AWP/WAC ratio across all drugs. That is, the relevant statistical question is not whether the sample has sufficient information to meet the more difficult challenge of estimating 278 separate time trends, but whether it has sufficient information to show a decline in APP overall. This is the relevant empirical question in determining whether there is evidence of market responses, or “push-back.”

48. Dr. Hartman provides this relevant summary result in Exhibit F.1.a, in which he pools all observations to calculate a single, average time trend. Combining all evidence from the sample in this way, his results show a statistically significant, negative trend in APP. That is, Dr. Hartman’s own results show that, using the combined information of the full IMS sample, there is statistical evidence consistent with push-back through lower APPs.⁵⁵

49. This is not simply the result of averaging a set of drugs with negative time trends with a larger set with no time trend in order to generate a negative overall average. As explained above, the statistically insignificant results for the bulk of drugs do not prove that those drugs have no time trend. Instead, those insignificant results mean that the sample did not have enough

55. Of course, the other limitations of Dr. Hartman’s data still apply so the push-back evidence in Dr. Hartman’s combined model refers to PBMs, not to TPPs. Also, weighting Dr. Hartman’s IMS data by each NDC’s dollar volume over the period of Dr. Hartman’s data generates a similar result. See Appendix 4 for results of the weighted regressions.

information to determine the direction of the trend for those specific drugs. But using the power of the full sample, Dr. Hartman demonstrates that the combined trend is negative.

50. An example may help to clarify. Suppose I have ten dimes, which are unevenly weighted, such that each has a 60 percent chance of turning up heads when flipped. I suspect this may be the case, so I flip each dime ten times to test whether the probability of heads is 50 percent. Suppose, as expected, each dime comes up heads six times out of the ten. Using a standard t-test, six heads out of ten is not close to being statistically significantly different from 50 percent. So, following Dr. Hartman's method, one would say that there were zero significant results out of ten, and thus no evidence for uneven weighting. However, pooling the information, 60 heads out of 100 is statistically significantly different from 50 percent at standard significance levels. Hence, only by pooling the information do I have enough statistical power to detect the direction of the effect.⁵⁶

51. Dr. Hartman also asserts that finding different time trends across drugs implies that changes in APP are due to "drug-specific competitive factors" and thus that they must be "independent of the Scheme."⁵⁷ However, he provides no support for the claim that finding different trends across drugs in any way shows that the trends are "independent of the scheme." I agree with Dr. Hartman's statement, cited above, that demand, supply, institutional, scientific, and technological factors collectively determine prices. To the extent these factors differ across drugs, the ability and incentive to renegotiate discounts and dispensing fees may vary across drugs. So there is no *a priori* reason to believe the nature of the adjustments must be the same

56. If the dimes had different probabilities, it would be very difficult to distinguish between them with ten flips each. However, I could still pool the observations to determine that, overall, the set of dimes is unfairly weighted.

57. September 2007 Hartman Declaration, Attachment F, at ¶33.

for all drugs.⁵⁸ In fact, to the extent that there are differences in the ability or incentive to renegotiate contract terms across drugs, this heightens the need for individuated analyses, as different TPPs have different mixes of expenditures across those drugs. Conversely, the fact that different TPPs have differing ability to negotiate new pricing terms could itself generate different time trends across drugs, again since different TPPs have different mixes of expenditures across drugs.

C. Conducting Dr. Hartman's Statistical Analysis Using Data from GE and Cigna Shows Evidence of a Market Response to the Changes in AWP/WAC Ratio

52. As a test of the implications of the problems with Dr. Hartman's IMS data, I replicated his analysis using data from sources that do not have the same data limitations. First, the claims data that I use from GE and Cigna capture reimbursements made by GE and Cigna (both TPPs) for pharmaceutical claims.⁵⁹ In addition, these claims data do not include transactions for any non-TPP purchasers (*i.e.*, Medicaid and cash customers) and they do not have the problem of some pharmacies reporting AWP.

53. By applying Dr. Hartman's statistical analysis in a straight forward way to the GE and Cigna data, I obtain results showing statistically significant declines in the AA/AWP ratio at both the individual drug level and when aggregating across all drugs. These results are consistent with the view that there is "push-back" by TPPs in the form of increased discounts off AWP. The results are also consistent with the view that PBMs squeezed retail pharmacies through increased discounts.

58. By my understanding, discounts and dispensing fees tend to be negotiated uniformly across drugs. My point here is simply that separate terms and negotiations for different drugs do not invalidate my main points.

59. In the case of GE, the data received were provided by Medco, which was GE's PBM at the time the data were produced.

54. Using TPP claims data from GE and Cigna, I find declining AA/AWP ratios both for a number of the largest drugs and overall during the class period. Therefore, the results that Dr. Hartman asserts do not show “push-back” on the part of TPPs (which we now understand really measure squeeze on the part of PBMs) appear to be driven by the dilution of PBM/TPP transactions in the IMS data with the inclusion of cash and Medicaid transactions and by the dilution of reported net prices caused by inapposite pharmacy reporting.⁶⁰

55. Running Dr. Hartman’s analyses using the GE and Cigna data shows statistically significant reductions in the ratio of AA/AWP. These results stand in sharp contrast to Dr. Hartman’s results and further confirms that his conclusion that there is no market response to the alleged scheme is not supported by the data.

D. Dr. Hartman’s Mischaracterization of My Regression Analysis Undermines the Causal Basis for His Damages Analysis.

56. In the January 2007 Willig Report, I charted the growth in TPP discounts off AWP over time to show that increases in TPP discounts off AWP were associated with AWP inflation. Dr. Hartman’s response in the March 2007 Hartman Declaration was to use these data in a regression in an attempt to show that it was time that was the driver of the increase in TPP discounts. In the May 2007 Willig Declaration, I showed that AWP did a better job of predicting TPP discounts than time, which again showed the correlation between AWP inflation and TPP discounts. In the September 2007 Hartman Declaration, Hartman responded to the regression analysis in my May 2007 Willig Declaration.

57. Dr. Hartman’s response to my regression analysis is entirely built around the idea that I am using it to establish a causal relationship. I am not. I recognize and agree with Dr. Hartman’s argument that list and transactions prices are simultaneously determined as part of a

60. The detailed results of my analysis are presented in Appendix 4.

complex system, in which they affect one another, and are both influenced by a wide range of other “economic, institutional, technological, and scientific facts and factors.” All of these factors would need to be modeled to understand the cause and effect relationship between a change in any one of these variables and the effect on others.

58. My purpose in presenting the regression analyses was to demonstrate that the observed statistical relationship between AWP and the average payment percentage (APP) is consistent with the view that many TPPs react to higher AWP by negotiating lower APPs (through higher discounts or lower dispensing fees).⁶¹ Separate from my regression analysis, I have provided a large number of specific examples of TPPs reacting to higher drug prices by negotiating lower APPs. The statistical evidence that movements in APP are negatively correlated with movements in AWP is consistent with these examples.

59. However, I disagree with Dr. Hartman’s additional claim that, because my regressions do not prove a causal relationship between AWP and APP, they “are meaningless” and “have no evidentiary value.” In fact, my regression results have a very precise meaning – they establish the correlation between AWP and APP in the data. In particular, they tell us that, in these data, increases in AWP are associated with decreases in APP. Standard econometrics indicates that regressions can be used to establish such statistical relationships, even when they cannot establish causation without further assumptions and more formal modeling.⁶² Because this negative relationship is what one would predict if TPPs negotiate lower APPs in response to higher AWP, my regressions have evidentiary value in demonstrating that the observed pattern

61. See May 2007 Willig Declaration, at ¶64 (“These econometric results are consistent with the conclusion that there were market responses to the alleged scheme because there are market responses to AWP inflation.”)

62. See Goldberger, *A Course in Econometrics*, 1991, Chapter 31 for a clear discussion of this distinction.

in the data is the one expected if such negotiations are occurring. That is, as I concluded in my report, the results are consistent with the occurrence of market responses even if they cannot, on their own, prove causality.

60. In fact, my regression analysis, and Dr. Hartman's consideration of APP vs. a regression trend line are equivalent in this fashion. Neither attempts to establish a causal relationship. Rather, Dr. Hartman shows a correlation between APP and a time trend, and I show a correlation between APP and AWP. The meaning of each is to measure a particular statistical correlation between two variables. It is nonsensical to claim that one is valuable and the other meaningless based simply on which correlation is being measured.

61. Dr. Hartman has argued – by observation of a graph, with no formal test -- that the correlation he establishes between a time trend and APP implies that observed changes in APPs are not related to changes in AWP. This is not a valid implication. My basic point is that, because AWP's have been steadily increasing – and thus closely following a time trend themselves – any view that TPPs respond to higher AWP's through lower APP's would predict that APP's should closely follow a time trend as well. So observation of the time trend in average APP is certainly not inconsistent with market responses to higher AWP's. In fact, the average AWP so closely follows a time trend that standard regression techniques cannot separate the two correlation patterns.⁶³

62. Because Dr. Hartman used the time trend in APP to oppose my view that APP adjusts to changes in AWP, I also evaluated the relative ability of a time trend and AWP to predict the changes in APP. My results indicate that, using standard statistical measures, APP is

63. Together the variables predict APP very well, but neither is statistically significant, a classic sign that they are highly “multicollinear.” See W. Greene, *Econometric Analysis*, Second Edition, 1993, p. 267.

better predicted by AWP than by a time trend. Again, this does not on its own prove causality, but is consistent with the view that many TPPs respond to higher AWP by negotiating lower APPs.

63. Finally, note that to compute damages, Dr. Hartman would need to estimate the change in actual transaction prices caused by the change in the AWP/WAC ratio. He has not advanced a methodology that meets the standards for measuring a cause and effect relationship articulated in Attachment F. That is, Dr. Hartman correctly notes that:

...those prices are determined by the underlying economic, institutional, technological and scientific facts and forces explaining demand, supply, and changes in demand and supply. Any economist analyzing markets understands that such facts and forces simultaneously determine the list prices of the products in a market (here the AWP and WAC of drugs) and the transaction prices of products in a market (here, the allowed reimbursement amount for a drug...) (Attachment F: ¶44.)

I agree with this. To put it slightly differently, list prices and transaction prices are simultaneously determined in equilibrium. A critical feature of such simultaneous systems is that changing any one variable will impact the others, so that to predict the new transaction prices following a change in list prices (or here, the ratio of two list prices), the standard economic method is to solve for the new equilibrium.⁶⁴ Dr. Hartman does not provide any analysis of the new equilibrium transaction prices caused by a change in list prices. Rather, he just asserts that no other contract terms changed for any TPP, so that he can use a simple algebraic determination of damages, with no need for economic analysis of what TPPs actually paid vs. what they would have paid but for the change in list prices. That is, to establish damages, Dr. Hartman needs to measure the change in transaction prices caused by a change in

64. See Luis Cabral, *Introduction to Industrial Organization* (2000, p.122), (“The advantage of equilibrium analysis...is that it takes into account all of the effects that follow from an exogenous change...Taking the initial equilibrium values as constant may lead to a gross misestimation of the impact of an exogenous change...”).

list prices, but he has offered no analysis of the complex simultaneous system that jointly determines the two variables. Most importantly, because the relationship between list and transaction prices in this market is determined by distinct contracts – individually negotiated by each TPP with PBMs and pharmacies – determining the change in transaction prices caused by a change in list prices requires individuated analysis of the “economic, institutional, technological, and scientific facts and forces” affecting each TPP and its relationships with PBMs and pharmacies.

V. DR. HARTMAN DOES NOT PROVIDE A FEASIBLE ALTERNATIVE AGGREGATE DAMAGES METHODOLOGY

64. The Court invited plaintiffs and Dr. Hartman to propose a feasible aggregate damages methodology for the TPP class that does not overstate aggregate damages. In particular, the Court’s instruction is the following:

I am not persuaded that the aggregate methodology works with respect to the proposed class of TPPs. As I understand the methodology, it includes contracts that were renegotiated after the large bump-up in early 2002. Dr. Hartman may submit an aggregate damage methodology which includes only those contracts in effect when the scheme took place and excludes reimbursements under contracts renegotiated in response to the increase. Another alternative would be to only include damages for one year after the large increase in 2002 took effect.⁶⁵

The Court has thus invited plaintiffs to propose a feasible damages methodology under two alternative approaches. My understanding of the first alternative is the following: The methodology should consider only TPP “contracts in effect when the scheme took place”, that is, entered into before August 1, 2001. Then the methodology should exclude all reimbursements after the point in time when each contract was “renegotiated in response to the increase” in the AWP/WAC ratio.

65. Class Certification Order, at 25.

65. Under the Court's opinion, damages would be overstated if they include reimbursements after renegotiation or amendment of contracts in place at the beginning of the alleged scheme. In particular the Court states,

The Court can address the predominance concerns flagged by McKesson by defining the class to include only those TPPs which had contracts based on AWP before the start of the scheme, and would not include any damages for drug reimbursements for drugs under contract, renegotiated or amended during the class period to provide price adjustments.⁶⁶

Determination of aggregate damages under the Court's first alternative would require a complex individualized analysis to determine when, how and why each relevant TPP contract (*i.e.*, those in effect as of August 1, 2001) was renegotiated or otherwise amended.

66. The Court's second alternative asks whether Dr. Hartman can provide a feasible damages methodology for "one year after the large increase in 2002 took effect."⁶⁷ Under that alternative, damages would be limited to approximately March 2003, which is one year after the increase in the AWP/WAC ratio for many drugs in the first quarter of 2002. While this alternative may appear simpler than the first alternative, it would still require the same individualized contract-by-contract analysis in order to provide an unbiased estimate of aggregate damages. This follows because the second alternative would include reimbursements under all TPP-PBM contracts, even those that took effect after August 1, 2001, and would include reimbursements even after renegotiation of contracts. Thus, the only way for this second alternative to be an unbiased estimate of damages (*i.e.*, to not overstate damages) is to perform an individualized analysis to eliminate contracts entered after August 1, 2001 and to eliminate

66. Class Certification Order, at 18.

67. Class Certification Order, at 25.

reimbursements under contracts where TPPs were able to renegotiate price adjustments mitigating the effect of the AWP-WAC spread increase.⁶⁸

67. The September 2007 Hartman Declaration does not accept the Court's invitation to submit a feasible damages methodology under either the first or second alternative. Instead, Dr. Hartman provides three aggregate damages methodologies: One based on 2.5 years of damages beginning on August 1, 2001, another based on 1.5 years of damages beginning on August 1, 2001 and one based on any number of months that the Court chooses. These three alternatives are actually the same as Dr. Hartman's original three and a half year aggregate damages methodology running through March 2005 (already rejected by the Court), with only the modification of alternative end dates to damages. Dr. Hartman's methodology suffers from the same flaw as his original three and a half year methodology. It fails to exclude price adjustments that TPPs were able to renegotiate that mitigated the effect of the change in the AWP/WAC spread. That is why, as I explain below, it is not sufficient to provide an aggregate damages number on an annual or monthly basis and why determination of the correct period of time for damages requires an individualized analysis. An arbitrarily set damages period will lead to an overstatement of damages just as Dr. Hartman's three and a half year damages methodology did. This is precisely the reason that the Court invited Dr. Hartman to propose a feasible methodology that will not award damages once a TPP is able to obtain mitigation of the impact of the change in the AWP/WAC ratio through contract renegotiation. As I now explain, Dr. Hartman does not even attempt to propose a feasible damages methodology under the

68. In essence, the individualized analysis required to have a feasible damages model under the second alternative is likely more complex than what is required under the first alternative because the second alternative is not limited to contracts in effect as of August 1, 2001.

Court's first alternative and provides a methodology that will overstate damages under the Court's second alternative.

A. Dr. Hartman's Methodology Does Not Attempt to Respond to the Court's First Alternative

68. Dr. Hartman's aggregate damages methodology is essentially unchanged from the methodology that he proposed in his earlier declarations. That methodology computes aggregate damages for a period of over 3.5 years, from August 1, 2001 through March 15, 2005. In that methodology there is no recognition that damages would cease for each TPP at the time that it renegotiated its contract terms, or otherwise mitigated the impact of the increase in the AWP/WAC ratio. Instead, Dr. Hartman presented a series of arguments intended to convince the Court to change its instruction and not require damages to be limited to pre-existing contracts.

69. It is not feasible with Dr. Hartman's aggregate damages methodology to limit damages for each TPP because determination of the remaining duration until renegotiation on pre-existing contracts requires an individualized analysis, which he neither performs nor stipulates. First, for each TPP it would be necessary to determine which contract was in place as of August 1, 2001. Dr. Hartman's methodology does not eliminate contracts that commence after August 1, 2001. Then, for each TPP, the methodology must determine a point in time at which substantial volumes of its drug purchases were subject to an AWP/WAC ratio change. This determination requires a detailed analysis of the TPP's drug purchases to be matched up with data on the timing of the change in the AWP/WAC ratio for each drug NDC. Once such a determination is made, it is necessary to determine the point in time when the TPPs were able, through contract renegotiations, to obtain price adjustments mitigating the effect of the spread increase. This would require more than a simple review of the contract terms. Instead, this

analysis requires a contract-by-contract determination of when a TPP was able to achieve such renegotiation of contract terms, even if it chose voluntarily to forego that opportunity.

70. Dr. Hartman's methodology does nothing to resolve any of these individualized issues. Instead, Dr. Hartman states that if the Court is not satisfied with his arguments as to why it should allow for damages over the full class period for all TPP plaintiffs, he has presented damages figures for a period of 2.5 years after August 1, 2001, 1.5 years after August 1, 2001 and on a monthly basis. This methodology does not address the Court's requirements under the first alternative because it is not limited to contracts in effect as of August 1, 2001 and does not exclude reimbursements after contract renegotiation. As I now explain, just ending damages at an arbitrary date also does not provide a feasible methodology under the Court's second alternative because it overstates aggregate damages.

B. Dr. Hartman's Aggregate Damages on an Annual or Monthly Basis is Not a Feasible Methodology under the Court's Second Alternative.

71. Providing damages on an annual basis (or even a monthly basis) does not solve the problem that the Court raises when it suggests its second alternative. Once there is an arbitrary damages period set, say through March 2003, then there is a mismatch between the actual harm incurred and the damages assessed. The Court recognizes that TPP/PBM contracts are renegotiated at varying points in time and are not tied to the nominal contract length. The Court states,

Other TPPs directly pushed back against the price increases by renegotiating their contracts with the PBMs. ESI testified that in renegotiating, amending, and renewing contracts, the FDB spread increases were important factors considered, and that other PBMs were acting in similar manner.⁶⁹

69. Class Certification Order, at 16.

Thus in any given month, there are a number of TPPs obtaining new contracts or new contract terms that would mitigate any harm from the alleged scheme. These TPPs would be overcompensated by an aggregate damages methodology that awards damages to all class members based on all transactions through, say, March 2003. To see this, consider TPPs with contracts renegotiated in April 2002. These TPPs would have been able to obtain mitigating changes in their contractual terms in April 2002, yet under Dr. Hartman's proposed aggregate damages methodology they would receive damages for transactions through March 2003.⁷⁰

72. Dr. Hartman's proposed methodology limiting damages to arbitrary end dates does not respond to the Court's instruction for a feasible damages methodology once it is recognized that the nominal end dates on contracts do not capture the true limit of each TPP's period of time prior to renegotiation or amendment of pre-existing contractual pricing terms.⁷¹

73. Even if one can determine whether, when and how each TPP was able to renegotiate the terms of its PBM contract to obtain price adjustments mitigating the effects of the price increases, the evidence that I cite in Appendix 3 regarding the ESI contracts with its TPPs indicates that some TPPs received concessions from ESI prior to the end of their existing contracts. The evidence of such renegotiation implies that it would be necessary to determine for each TPP whether it was able to mitigate the effect of the increase in the AWP/WAC spread. An arbitrary cut off of aggregate damages at, say, one and a half years, as Dr. Hartman has done, would overstate damages.

70. Dr. Hartman's methodology depends on the assumption that throughout the damages period, no contract was renegotiated to mitigate the impact of the Spread increase.

71. There are two other general reasons why contract terms are irrelevant for determining the true period of time before mitigating market responses take place that I highlighted in January 2007 Willig Report, at ¶¶90-2, 101-4 and the May 2007 Willig Declaration, at ¶18-9, 37. First, there are market responses that are not tied to TPP/PBM contracts such as reduction in the growth of WAC. Second, market responses may compensate TPPs for "losses" that occurred prior to implementation of the market response.

VI. CONCLUSION

74. In the September 2007 Hartman Declaration, Dr. Hartman attempts to convince the Court that it should certify a TPP damages class for a period of over 3.5 years by claiming that there were no mitigating market responses for any TPPs following commencement of the alleged scheme. Dr. Hartman relies on two principal arguments to support his claim. First, he claims that PBMs benefited from the alleged scheme and therefore would not pass on to TPPs any of the knowledge or benefit of the increased AWP/WAC ratio. In making this argument, Dr. Hartman argues that the Court is incorrect in its observation that there is “fierce” competition among PBMs for TPP business. Second, Dr. Hartman uses IMS data to show that there is no empirical evidence of TPP “push-back.”

75. My expert opinion is that Dr. Hartman’s arguments regarding the lack of PBM competition are incorrect. The competition among PBMs is imperfect competition, but “fierce” competition. This is part of why determination of impact and damages for any TPP requires an individualized analysis.

76. Furthermore, Dr. Hartman’s statistical analysis does not support his hypothesis of zero push-back on the part of TPPs. For one thing, the IMS data that he uses do not even reflect TPP payments to PBMs. That said, Dr. Hartman’s statistical analysis actually generates results that are consistent with PBM squeeze and TPP “push-back.” In addition, examination of alternative data from GE and Cigna using Dr. Hartman’s methodology provides additional evidence refuting Dr. Hartman’s conclusions and indicating that there were market responses to the increased AWP/WAC ratio.

77. Finally, I conclude that Dr. Hartman’s proposed aggregate damages methodology, even for a shorter period of time than 3.5 years, fails to respond to the Court’s instruction that Dr. Hartman provide a feasible aggregate damages methodology. The Court’s instruction rejects damages based on TPP transactions that occurred after changes in contractual pricing terms that

were in effect at the inception of the alleged scheme. Dr. Hartman's methodology does not provide a way to cut off damages to plaintiffs who have already obtained relief from the increased AWP/WAC ratio. Therefore, Dr. Hartman's proposed methodologies overstate aggregate damages.

I declare under penalty of perjury that the foregoing is true and correct. Executed this 15th day of October 2007, in Princeton, New Jersey.

Robert Wilby

APPENDIX 1

APPENDIX 1

Additional Materials Relied Upon

1. FTC/DOJ Merger Guidelines, Horizontal Merger Guidelines, U.S. Department of Justice and the Federal Trade Commission (Issued: April 2, 1992, Revised: April 8, 1997)
2. Memorandum and Order for Class Certification, New England Carpenters Health Benefits Fund, et al. v. First DataBank, Inc. and McKesson Corporation (August 27, 2007)
3. Expert Report of Raymond S. Hartman and report backup documents, data and programs (September 14, 2007)
4. Expert Report of Kimberly P. McDonough and backup documents (September 14, 2007)
5. David M. Kreps, *A Course in Microeconomic Theory* (1990)
6. Arthur S. Goldberger, *A Course in Econometrics* (1991)
7. Medco Annual Report (2005)
8. Express Scripts Inc., 10-K (fiscal year ended December 31, 2005)
9. United States Government Accountability Office, GAO-05-779, "Price Trends for Frequently Used Brand and Generic Drugs from 2000 through 2004"
10. Kimberly P. McDonough, "Pharmacy Benefits Managers," in Handbook of Pharmaceutical Public Policy, eds. Thomas R. Fulda and Albert I. Wertheimer (2007)
11. GE Group Life Assurance and Cigna claims data produced in In re Pharmaceutical Average Wholesale Price Litigation pursuant to third party subpoenas, and produced to McKesson by plaintiffs.

APPENDIX 2

APPENDIX 2

Comments on Various Claims in the McDonough Report

1. As I indicated at ¶7, plaintiffs submitted an expert report by Kimberly P. McDonough (“McDonough Report”). In this appendix, I comment on various claims contained in the McDonough Report. There are other claims that I do not respond to, but my lack of a direct response should not be construed as agreement with Ms. McDonough. Instead, there is nothing in the McDonough Report that changes the opinions contained in the January 2007 Willig Report and the May 2007 Willig Declaration.

I. MS. MCKDONOUGH MAKES UNSUBSTANTIATED STATEMENTS ABOUT PBM-TPP CONTRACTING PRACTICES

2. Ms. McDonough claims that TPP/PBM contracts tend to be three year contracts. She states, “[o]verwhelmingly, contracts between TPPs and PBMs are written for a term of three years, often with automated renewal provisions.”¹ She cites only one contract to support this statement (a [REDACTED] contract). It is not clear how a single contract provides a basis for her claim that three-year contracts are an “overwhelming” phenomenon. In addition, I reviewed twelve contracts produced by the named plaintiffs in this case, who are held out as representative of the class.² My review shows that five

1. McDonough Report, at p. 10 (footnote omitted).

2. My review included the following contracts: DC-37 / [REDACTED] (Esperon Deposition Exhibit 33); DC-37 / NPA, Inc. (Esperon deposition Exhibit 3); NEC / Medco (Buckley Deposition Exhibit 8); NEC / AdvancePCS (Buckley Deposition Exhibit 6); NEC / PCS, Inc. (Buckley Deposition Exhibit 4); PFTHWF / ESI, Inc. (Steinberg Deposition Exhibit 13); PFTHWF / [REDACTED] (Steinberg Deposition Exhibit 12); PFTHWF / NPA, Inc. (Steinberg Deposition Exhibit 11); Pirelli / AdvancePCS (Seymour Deposition Exhibit 3); Pirelli / [REDACTED] (Seymour Deposition Exhibit 4); Teamsters / ESI, Inc. (Einhorn Deposition Exhibit 14); Teamsters / GPP, Inc. (Einhorn Deposition Exhibit 6).

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of these contracts had initial terms that were less than three years. This finding is inconsistent with Ms. McDonough's opinion that contracts are "overwhelmingly" for a period of three years.

3. Ms. McDonough states, at p.10, that although contracts can be terminated before the end of the term, most contracts limit this option to circumstances of default and there are often penalties. She states that in her experience (with no other support) she has seen only one contract terminate prior to the end of its term. Her suggestion is that TPPs that were in the middle of a contract period at the time of the alleged scheme were locked into the price terms of the existing contract. However, the equally important question relating to this point that Ms. McDonough does not address is whether contracts are commonly renegotiated in the middle of the contract term. I give an example in Appendix 3 at ¶¶12-14 of DC 37's mid-contract renegotiations with ESI. Ms. McDonough's opinion is limited to contract termination.

4. Ms. McDonough also states that, [a]lthough some TPPs have contracts with PBM (sic) that are effective on July 1 of any given year, most PBM contracts renew in January, corresponding with the TPP's fiscal year and in coordination with Medicare contract years."³ Ms. McDonough provides no evidence for this statement. Here again, my review of twelve contracts produced by the named representative plaintiffs in this case suggests that the effective date does not show the type of pattern Ms. McDonough suggests. In fact, only two of the twelve contracts I reviewed had effective dates in January and only two contracts had an effective date in July. The other eight contracts

3. McDonough Report, at p. 11.

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had effective dates in April, May, June, and September. This evidence is inconsistent with Ms. McDonough's opinion.

5. Ms. McDonough then concludes that, "[b]ecause contract terms are static for the three year terms of the contract, any pharmacy discount rates implemented on January 1, 2002 would continue until December 31, 2005 before an opportunity arose for changes to offset the AWP price increases."⁴ She, however, says nothing about contracts entered into on January 1, 1999, which according to Ms. McDonough, continue until December 31, 2002. Likewise, based on Ms. McDonough's position, contracts entered into on January 1, 2000 would end on December 31, 2003, and contracts beginning on January 1, 2001 would end on December 31, 2004. The key point is that Ms. McDonough's characterization does not consider the ongoing, rolling nature of PBM – TPP contracts and negotiations.

II. MS. MCDONOUGH'S OPINIONS ARE CONSISTENT WITH THE VIEW OF MARKET RESPONSES BY TPPS TO CHANGES IN AWP

6. Ms. McDonough's analysis of market responses indicates that knowledge of the increase in the AWP/WAC ratio spread quickly to PBMs and to firms that consult with TPPs. Ms. McDonough acknowledges that "the significant increases in AWP price started to become apparent to the PBM industry in 2002..."⁵ She then points out that her company discovered the change in the AWP/WAC ratio in late 2002 and notified FDB. She claims that FDB told her company it surveyed wholesalers and that wholesalers had increased 20% margins to 25% to "achieve consistency in the market", and that the

4. McDonough Report, at p. 11.

5. McDonough Report, at p. 11.

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Lipitor and Neutortin increases were because of the Parke-Davis/Pfizer merger. This implies that a consulting company that counsels TPPs knew in late 2002 not only that AWP had gone up faster than usual for some drugs, but that part of the increase in AWP was unrelated to a WAC (cost) increase. As a result, Ms. McDonough's company, which counsels TPPs in PBM negotiations, knew there was an increase in the AWP/WAC ratio in late 2002. Ms. McDonough goes on to say again how ignorant TPPs are because they do not buy the FDB data and are not knowledgeable about pricing terms, but it seems that her organization exists in large part to fill the gap in their knowledge. What this does is raise additional individual issues with respect to which TPPs had contracting/negotiating assistance from consulting companies, whose knowledge of the increase in AWP/WAC spreads may have helped some TPPs mitigate the effects of the alleged scheme.

7. Similarly, Ms. McDonough acknowledges that, "TPPs are continually seeking methods to rein in drug costs"⁶ but she distinguishes between price increases that come from the manufacturer and those stemming from the increased AWP/WAC ratio, which were not a true increase in cost to the pharmacy. She provides no explanation for why TPPs would rein in cost increases resulting from increases in WAC and AWP, but not from increases in AWP alone.⁷

8. Ms. McDonough also contends that the PBMs were able to squeeze some or all of the added benefit from retail pharmacies when she states, "As the PBM industry

6. McDonough Report, at p. 12.

7. McDonough assumes without any support that "a change in the ratio of AWP to WAC resulted in price increases to the TPPs without a corresponding price increase to the pharmacy, thus increasing pharmacy margins." McDonough Report, at p. 13.

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learned of the change in AWP to WAC ratio, they were able to renegotiate pharmacy contract rates, reducing the prices paid to pharmacies to compensate wholly or partially for the increased profit margins.”⁸ She then makes an argument similar to the claim of Dr. Hartman that “[i]n the absence of market pressure from the TPP, there would be little incentive on the part of the PBM industry to disclose improvement in pharmacy rates to their TPPs customers.”⁹ Ms. McDonough’s error is similar to that of Dr. Hartman: Variation in the degree of “market pressure” from TPPs is precisely why determination of impact and damages requires an individualized analysis.

III. MS. MCDONOUGH CLAIMS WITHOUT AN ECONOMIC BASIS THAT CHANGES IN AWP PRICES RESULTED IN HIGHER COSTS TO TPPS AND SELF-INSURED EMPLOYERS

9. The figure in McDonough Report at p. 8 shows the percentage increase in total per employee per month (“PEPM”) spending for pharmacy benefits. The percentage increase then is split between the percentage increase due to utilization (using more drugs, using newer, more expensive drugs, etc.) and percentage increase in unit cost (drug price inflation). These data are found in the Medco Drug Trend report. Ms. McDonough points to an apparent increase in growth in unit cost in 2002 as being the result of the alleged scheme. Ms. McDonough claims that AWP inflation was the single greatest factor influencing pharmacy benefit costs increases in 2002 and that this “offset significant efforts on the part of employers and TPPs to rein in costs.”¹⁰

8. McDonough Report, at p. 13.

9. McDonough Report, at p.13.

10. McDonough Report, at p. 9.

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10. Ms. McDonough's claim is asserted without support. She provides no basis for distinguishing inflation in AWP from inflation in WAC. Therefore, her claim that increased unit cost inflation in 2002 is a result of the alleged scheme is presented as only a claim with no articulated foundation or support.

11. It is worthwhile to note that Ms. McDonough's discussion does support the position that there are market responses to increases in AWP inflation. She specifically mentions formularies, tiered co-pay programs and utilization controls as the mechanisms used by the TPPs to control costs. In this way, Ms. McDonough contradicts Dr. Hartman and supports the Court's position and my view by acknowledging that TPPs push these other types of changes to reduce drug spending.

**IV. MS. MCDONOUGH PROVIDES NO BASIS FOR HER
ASSERTION THAT TPPs DID NOT RECEIVE OFFSETS TO
COVER THE AWP BUMP**

12. Ms. McDonough presents a chart containing the PBMI data that I used in the May 2007 Willig Declaration.¹¹ She uses these data to claim that she observes the lack of a noticeable bump in apparent discount off AWP in 2002. Her error arises from the fact that these data only attempt to measure discounts and dispensing fees and are silent on what changes may have occurred in rebates and other pricing terms. In addition, she fails to recognize that the PBMI data represent only an average and say nothing about whether particular TPPs were able to recoup. The key point that I showed with these data is that there is an apparent relationship between discount off AWP and increases in AWP.

11. McDonough Report, at p. 15.

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Accordingly, these data are consistent with the position that an increase in AWP, for any reason, would be associated with increases in discounts off AWP.¹²

13. Ms. McDonough then makes the following unsubstantiated claim: “In my experience with hundreds of clients, very few PBMs are willing to provide pass-through contracts to their clients, and this type of arrangement is the exception rather than the rule.”¹³ Ms. McDonough’s opinion in this case may be that pass-through PBM contracts are not common, but she has published an article with a somewhat different opinion on this topic. In a book chapter written by Ms. McDonough in the *Handbook of Pharmaceutical Public Policy*, Ms. McDonough writes that, “[o]ver the past several years, a new generation of PBM has emerged in the market place. ... Rather than retaining revenues through undisclosed revenues and margins in business practices, these newer PBMs offer flat-rate pricing of services, with a complete pass-through of all discounts and rebates.”¹⁴ Clearly, she believes this type of contracting exists and that its use is increasing in frequency. But, the key point here is that Ms. McDonough does not refute that TPPs with pass-through contracts would not be harmed once the PBM renegotiated

12. Ms. McDonough also mischaracterizes my use of an example to show how an increase in the discount to 17 percent for a particular TPP would be enough to offset the impact of an increase in AWP from the alleged scheme. She claims that although a discount of 17 percent might occur, the average is 15.3 percent. McDonough Report, at p. 15. The key to my example is that a relatively small change in discount would be sufficient to offset the impact of the increased AWP for a TPP, which has nothing to do with the average level of the discount.

13. McDonough Report, at p. 16.

14. Kimberly P. McDonough, “Pharmacy Benefits Managers,” in *Handbook of Pharmaceutical Public Policy*, eds. Thomas R. Fulda and Albert I. Wertheimer, 2007, at p. 278.

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with pharmacies.¹⁵ That is why determination of impact and damages requires an individualized analysis.

14. Ms. McDonough provides a quote from ESI about how ESI negotiates with pharmacies on its own behalf for a price that may be greater than or less than what the TPP pays.¹⁶ She states that, “[e]ven in the event that a PBM were willing to provide a pass-through pricing arrangement, there is little or no incentive on the part of the PBM to renegotiate contracts with pharmacies to achieve higher discounts, particularly if the PBM is already meeting its contractual obligation to the third-party payor.”¹⁷ This claim is inconsistent with Ms. McDonough’s view that PBMs have the incentive and ability to squeeze pharmacies. Once a PBM renegotiates its contracts with pharmacies, TPPs with pass-through contracts receive the benefit of that renegotiation. Other TPPs, to varying degrees, also receive a benefit so long as there is some degree of competition between PBMs for their business. I realize that Ms. McDonough is not an economist, but economic analysis indicates that changes in PBM costs resulting from increased discounts or changes in other terms to squeeze retail pharmacies would be passed on to some degree to TPPs. Ms. McDonough instead makes the extreme and unsubstantiated assumption that none of the benefit would be passed on to any TPPs.

15. The issue of pass-through contracts and their role in mitigating the effects of increased AWP/WAC spreads on TPP reimbursement is an issue to which Dr. Hartman has not responded.

16. McDonough Report, at p. 16.

17. McDonough Report, at p. 16.

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V. MS. MCDONOUGH MISCHARACTERIZES MY DISCUSSION OF THE RELATIONSHIP OF AWP TO TPP REBATES REVENUES

15. Ms. McDonough mischaracterizes my analysis when she states, “In his report, Willig indicates that increases in AWP prices were accompanied by corresponding increases in rebate payments, thus offsetting the impact of the AWP price.”¹⁸ Her mistake is that my opinion is that one set of market responses to the increase in AWP is changes in the percentage of the PBM rebates that are passed through to TPPs. Ms. McDonough criticizes my use of the [REDACTED] example of increasing rebate pass-through from PBM to TPP because she claims that the change in the rebate pass-through percentage pre-dated the change in AWP/WAC ratio. The point is that regardless of the timing, the [REDACTED] example is evidence of the competition that PBMs engage in when trying to win TPP business. I did not say that this was an example of a rebate pass-through that changed because of the scheme. It is simply an example of how competition brings about price concessions through changes in the rebate pass-through percentage.

18. McDonough Report, at p. 16.

APPENDIX 3

APPENDIX 3

Dr. Hartman's Mischaracterizations of My Testimony and the Evidence

1. Throughout the September 2007 Hartman Declaration, Dr. Hartman makes statements and arguments that are misleading either because they mischaracterize my opinion or because they mischaracterize or ignore documentary evidence and testimony in this matter. This appendix brings light to some of these instances and more fully explains my opinions and the evidence on these matters.¹

I. MY OPINION IS NOT THAT ALL PBMS AND TPPS KNEW ABOUT THE ALLEGED SCHEME – MY OPINION IS THAT SOME PBMS AND SOME TPPS KNEW ABOUT THE ALLEGED SCHEME

2. Dr. Hartman, in several places in the September 2007 Hartman Declaration, discusses PBM and TPP knowledge of the alleged scheme and he mischaracterizes my opinion as being that all TPPs and all PBMs had knowledge of the alleged scheme. In many instances Dr. Hartman makes statements about what “McKesson” asserts, but he also attributes these opinions to me. See, for example:

McKesson asserts that all PBMs knew of the Scheme and its impact upon Spread; McKesson asserts that all TPPs were informed.²

...as McKesson's counsel and McKesson's expert now assert, 'They all knew, they all were told; the PBMs all

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1. This appendix is in no way meant to highlight every instance in the September 2007 Hartman Declaration where my opinions differ from those of Dr. Hartman or where I feel Dr. Hartman has misrepresented my opinions or the facts in this case.
 2. September 2007 Hartman Declaration, at ¶38.

knew it. They knew this difference occurred. They told the TPPs this.³

This is not an accurate representation of my opinion in this matter.⁴ My opinion is, and has always been, that there is evidence of knowledge and action on the part of some TPPs and PBMs and that this varied knowledge and action contribute significantly to the individualized issues that cannot be evaluated on a class-wide basis.⁵

3. It is Dr. Hartman who has put forth the extreme position that none of the TPPs knew of the alleged Scheme and that none of the TPPs were able to take any action to mitigate the effects of the alleged scheme. Dr. Hartman needs there to be no knowledge on the part of the TPPs and PBMs and no ability for TPPs to mitigate AWP inflation.⁶ Otherwise, even under his own theories, his aggregate damages methodology fails.

4. Similarly, Dr. Hartman suggests that my opinion is that all TPPs were informed of the scheme by either Caremark or ESI.⁷ This is also a mischaracterization of

3. September 2007 Hartman Declaration, at ¶41.

4. My understanding is that Dr. Hartman's statements also misrepresent the opinions of McKesson's counsel in this matter, but that McKesson's counsel will address any mischaracterizations by Dr. Hartman in their filings with the Court.

5. See, January 2007 Willig Report, at ¶73.

6. Dr. Hartman's argument that PBMs lacked knowledge of the alleged scheme is inconsistent with the argument he makes about PBMs that own mail order pharmacies. According to Table E.1 of the September 2007 Hartman Declaration, 74.7% of the PBM market share in 2002 belonged to PBMs with a mail order pharmacy. According to Hartman's most recent arguments, these PBMs benefited from and were complicit in the alleged scheme through mail order sales and therefore must have known of the alleged scheme.

7. "While McKesson insinuates that ESI and Caremark were sufficient to inform all TPPs of the Scheme, this insinuation fails. ... However, even if these two PBMs

my report and opinion. The issue here is not how many TPPs knew of the alleged scheme or how large a market share Caremark and ESI (or any other PBMs knowledgeable of the scheme) had at the time of the alleged scheme. Competitive market responses that mitigate the effects of the alleged scheme do not require all competitors to have perfect information. My opinion is that this knowledge by some PBMs and TPPs creates or contributes to individual issues with respect to impact and damages that must be evaluated on a TPP-by-TPP basis.

II. Evidence of Knowledge of TPPs

5. In Attachment D of the September 2007 Hartman Declaration, Dr. Hartman discusses at great length deposition and documentary evidence related to the specific characteristics of various TPPs and whether those particular TPPs had knowledge of the alleged scheme.⁸ Apparently Hartman sees as part of his role as economic expert to construe people's meaning and intent in emails and other documents produced in this litigation. In all events, the primary conclusion that Dr. Hartman draws from his review of discovery information is that only one TPP out of the twelve he reviewed [REDACTED] knew about the alleged scheme.⁹ While I do not agree with the

informed all of their clients of what they knew, and the evidence demonstrates that they did not, these two PBMs account for only 16% of all insured lives covered by PBMs and only 17% of expenditures processed by PBMs." September 2007 Hartman Declaration, Attachment D, at ¶51.b.

8. September 2007 Hartman Declaration, at ¶¶39-45.

9. September 2007 Hartman Declaration, Attachment D, at ¶39.i). Dr. Hartman seems to suggest there is something special about the fact that [REDACTED] initially learned of the alleged scheme from a source other than its PBM, ESI. (See, for example, September 2007 Hartman Declaration, at ¶50.) The fact that [REDACTED] learned of the alleged scheme from an entity other than ESI only

conclusions Dr. Hartman draws from the evidence he reviews, I believe the most important thing to take away from his review is that, in order to make the determination on knowledge, Dr. Hartman had to review the evidence on a TPP-by-TPP basis. Dr. Hartman undertook the type of review that I believe would have to be undertaken to determine which TPPs had knowledge of the alleged scheme to determine whether there was impact for each TPP.¹⁰

III. TPP Information is Not the Only Factor to Consider When Evaluating Potential Negotiations with PBMs

6. Select Health was among the TPPs reviewed by Dr. Hartman. During his review of Select Health, Dr. Hartman states:

Those TPPs which Dr. Willig characterizes as large, vertically integrated into pharmacy services and 'highly sophisticated,' for example Humana and Select Health, had no better knowledge regarding the increased Spreads induced by the Scheme than did the smaller, unsophisticated plans. For instance, Select Health did not track the relationship between AWP and WAC (see ¶39.g) of my Attachment D.¹¹

demonstrates that there were other entities that were knowledgeable of the alleged scheme and passed that information along to TPPs. This would only increase the probability that information about the alleged scheme was available to other TPPs.

10. Dr. Hartman makes the point in the last bullet of ¶39.i), with respect to [REDACTED] that he did not find any, "discovery materials demonstrating a strategic response to recontract or recoup the economic injury." While Dr. Hartman may argue that this means there was no TPP injury, I would argue that an appropriate damage analysis would require a more thorough review of the [REDACTED] claims data and financial outcomes.

11. September 2007 Hartman Declaration, at ¶48.

Whether Select Health regularly tracked the relationship between two specific list prices, such as AWP and WAC, is not the relevant question regarding Select Health's, or any TPP's, ability to obtain lower prices and extract profits from PBMs. The relevant issue is how much leverage a TPP has in negotiations with its current or potential PBMs. That leverage is, in part, determined by factors such as a TPP's size and its level of industry knowledge. A TPP does not need to have specific knowledge of the alleged scheme or the change in the AWP/WAC ratio. A TPP needs to have the ability to negotiate effectively with PBMs. Mr. Cannon testified that his, "primary concern is to obtain what [he] believe[s] to be the lowest possible reimbursement that the market will bear."¹² Part of his ability to do this comes about through the extensive market analyses conducted by Select Health and explained by Mr. Cannon:

We track national trends; we track our own internal trends; we track utilization mix; we track inflation values for particular products, particular drug classes. We look at contracting trends across the country, and from that I mean our people contracting on an AWP-minus basis, what types of dispensing fees do they use. We track -- we've been tracking the recent changes with the federal government in reimbursement of injectable drugs as it relates to ASP pricing; we track, to a lesser degree, trends related to WAC, and that's simply because our payment methodologies are based off of AWP. We do collect rebates on some items based on WAC, but we do not track that very closely.¹³

To say that Select Health is not a large and sophisticated PBM with the leverage and knowledge to mitigate the effects of the alleged scheme because it did not specifically track the relationship between AWP and WAC appears to be an error on the part of Dr. Hartman.

12. Eric Cannon, Select Health, October 11, 2006 ("Cannon (Select Health) Deposition"), at p.24.

13. Cannon (Select Health) Deposition, at p. 11.

IV. TPPS DID NOT NEED TO HAVE KNOWLEDGE OF THE ALLEGED CONSPIRACY SCHEME BETWEEN MCKESSON AND FDB TO MITIGATE THE IMPACT OF THE ALLEGED SCHEME

7. Dr. Hartman, in several places in the September 2007 Hartman Declaration, draws distinctions between PBMs and TPPs that had knowledge of AWP inflation and changes in the AWP to WAC spreads from those that knew of the alleged conspiracy scheme between FDB and McKesson:

I make the following distinctions regarding the Scheme and knowledge of the Scheme. I find no evidence that any TPPs or PBMs explicitly knew of the Scheme between McKesson and FDB. ... I do find evidence that a very limited number of entities realized that the FDB had arbitrarily but systematically increased the Spreads for a subset of drugs; ESI is such an entity. I may inadvertently refer to these limited situations as being cases where the entity 'knew of the scheme.' If so, I mean by that reference that the entity knew only of the impact of the Scheme on a subset of FDB/Medispan Spreads.¹⁴

8. As I discussed in the May 2007 Willig Declaration, it is not necessary for TPPs of PBMs to have knowledge of the alleged conspiracy scheme between FDB and McKesson in order to mitigate the effects of the alleged scheme.¹⁵ To mitigate the effects

14. September 2007 Hartman Declaration, Attachment D, footnote 4. In this same footnote, Dr. Hartman states that his "findings are buttressed" by deposition testimony of a McKesson employee who says he was unaware of the arrangement between FDB and McKesson. It is unclear to me how a McKesson employee's lack of knowledge of an alleged arrangement between FDB and McKesson has any bearing on the distinctions Dr. Hartman draws between different levels of knowledge about AWP inflation during the class period.

15. May 2007 Willig Declaration, at ¶25.

of the alleged scheme, TPPs need only have knowledge of inflation and have the ability to bargain with PBMs for lower prices.

9. Similarly, Dr. Hartman asserts that PBMs would have had to have told TPPs about the reason for the additional AWP inflation.

Regardless of whether or not PBMs knew of the Scheme, the real issue is whether or not they fully and adequately informed their TPPs such that a TPP knew of the arbitrary source of the price increase.¹⁶

This statement makes no economic sense. When there is competition (even imperfect competition), firms do not need knowledge of suppliers' costs in order to negotiate competitive prices. Eric Cannon, from Select Health testified that he negotiates until he believes he has received the "lowest possible reimbursement that the market will bear."¹⁷ It is not necessary that TPPs know that the increase in AWP was not associated with an increase in cost to the pharmacy and/or PBM.

10. Even though it is not necessary for TPPs negotiating prices to understand the underlying costs of suppliers, in this case, there is testimony that FDB was making public the fact that part of the increase in AWP was not due to increases in manufacturers' prices. Specifically, Kimberly P. McDonough, the Plaintiff's expert, testified that some time in 2002, her consulting company learned of the change in the spread between AWP and WAC in the FDB data and contacted FDB. She said,

[t]he representative from First Databank indicated that wholesalers changed pricing policies for the 20%

16. September 2007 Hartman Declaration, at ¶42

17. Cannon (Select Health) Deposition, at p. 24.

companies to achieve consistency in the market. The representative from First Databank further indicated that price increases for Lipitor and Neurontin occurred as a result of the take-over of Parke-Davis, a 20% mark-up company, by Pfizer, a 25% mark-up company in late 2001.¹⁸

Ms. McDonough's company, Advanced Pharmacy Concepts, provides consulting services to "employers, health plans and government agencies."¹⁹ Therefore, even if Dr. Hartman were right and TPPs needed to know that AWP increases were not completely caused by manufacturer price increases for some drugs, there were entities, like Advanced Pharmacy Concepts, that were getting that information directly from FDB. I do not believe that Ms. McDonough's position is that her consulting company withheld relevant pricing information from her TPP clients.

V. THE EVIDENCE SHOWS THAT DC 37 WAS ABLE TO RENEGOTIATE ITS CONTRACT WITH ESI, IN 2002, IN THE MIDDLE OF THE CONTRACT PERIOD

11. Dr. Hartman makes statements in the September 2007 Hartman Declaration refuting arguments McKesson's counsel made with respect to [REDACTED] contract renegotiation with [REDACTED] in 2002. In this discussion, Dr. Hartman uses a statement from my January 2007 Willig Report out of context and distorts its meaning. He says,:

In light of this testimony, McKesson's counsel assertion to the Court that [REDACTED] saved money "from their recontracting" has no basis in any facts presented to date. Dr. Willig admits as much. ... While McKesson's Counsel and Dr. Willig (see ¶48 of the January 2007 Willig Report)

18. Expert Report of Kimberly P. McDonough ("McDonough Report"), at pp. 11-2.

19. McDonough Report, at p. 1.

frequently appeal to discussions between [REDACTED] and [REDACTED] to increase the discount off AWP, "[REDACTED] and [REDACTED] never reached agreement on the enhanced retail discount."²⁰

Dr. Hartman uses the statement from the January 2007 Willig Report for support of his assertion that there was no evidence that [REDACTED] saved money through recontracting with its PBM, [REDACTED]

12. The full quotation from the January 2007 Willig Report on the subject of the 2002 renegotiation with [REDACTED] is as follows:

[REDACTED]: [REDACTED] entered into a three-year contract with [REDACTED] ("NPA") in September of 2001 with discounts of a minimum of thirteen percent off of AWP for branded retail drugs with an effective annual average discount of sixteen percent and eighteen percent off of AWP for branded mail order drugs.²¹ In April 2002, [REDACTED] and assumed control of the contract with [REDACTED]. In late 2002, only one year into the three-year contract, [REDACTED] and [REDACTED] entered into discussions regarding the terms of the [REDACTED] contract. Specifically, [REDACTED] wanted, and ESI offered, greater discounts and lower dispensing and administrative fees.²² The mail order discounts and

20. September 2007 Hartman Declaration, at ¶51.c and see similar statements made at Attachment D, at ¶39.b (footnote omitted, emphasis added).

21. Esperon Exhibit 3 (DC37 0496).

22. See, for example, Deposition of Rosaria Esperon, DC37, November 6, 2006 ("Esperon (DC37) Deposition"), pp. 192-3 ("Q. At the meeting you had with Express Scripts representatives in late 2002, early 2003, did they offer to reduce their administrative fees? A. Yes. Q. And is the proposal that's set out in your April 8th, 2003 letter the offer that Express Scripts made at the meeting? A. Yes. Q. And does your April 8th letter also reflect a proposal Express Scripts made at that meeting to reduce the formulary administrative fee? A. Yes. Q. And does the letter also reflect a proposal by Express Scripts at that meeting to increase the mail order brand discount? A. Yes. ... Q. Does the increase of the mail order brand discount from AWP minus 18 percent to AWP minus 20 percent that's set out in your April 8th letter reflect the offer that Express Scripts made at your meeting with them in late 2002, early 2003? ... A. I believe it does. Q. And those are the numbers that they offered at that meeting? A. I believe so. ... Q.

reduced fees are memorialized in an exchange of correspondence in the spring of 2003.²³ [REDACTED] and [REDACTED] never reached agreement on the enhanced retail discount. According to the deposition testimony, [REDACTED] offered discounts of 20% - 21%, but [REDACTED] wanted more.²⁴

A complete review of my opinion on the [REDACTED] renegotiation shows that the evidence states that [REDACTED] did enter into a contract renegotiation for higher discounts on its mail order business and [REDACTED] was prepared to increase the discount for [REDACTED] retail business substantially, but no agreement was reached because [REDACTED] wanted an even greater increase than what was offered by [REDACTED]

13. Therefore, the evidence on [REDACTED] suggests that only one year into its multi-year contract with [REDACTED] it was able to engage [REDACTED] in contract renegotiation and it received rate relief on mail order. It also received offers of rate relief for retail prescriptions, which it declined. Dr. Hartman seems to have erred in his assertions with respect to [REDACTED]

And did Express Scripts also offer at your meeting in late 2002 or early 2003 to eliminate the mail order dispensing fee? A. Yes.”).

23. See Esperon Exhibits 9 and 10.

24. See Esperon (DC37) Deposition, pp. 197-8 (“Q. Ms. Esperon, I just want to be sure that I’ve got your testimony on what the [REDACTED] representatives offered with respect to discounts on retail prescriptions at this meeting in 2002/2003. Did they offer at that meeting to increase the discounts that [REDACTED] was going to be giving the Plan on retail prescriptions? A. Yes, they did. Q. All right. And were those increased discounts on retail prescriptions ever implemented by [REDACTED]? A. No. Q. Why not? A. Because we couldn’t reach an agreement as to how much it would be. Q. So you remember them offering discounts of 20 to 21 percent at the meeting? A. Yes. Q. And the Plan was looking for more? A. Yes. Q. And because you couldn’t agree on the amount you’re saying there was never an agreement made for those greater discounts. A. That’s right. And when an agreement was made it was at the end of the relationship.”)

VI. DR. HARTMAN'S ANALYSIS IGNORES THE EVIDENCE PROVIDED IN THE MAY 2007 WILLIG DECLARATION

14. In Attachment D of the September 2007 Hartman Declaration, Dr.

Hartman says:

Dr. Willig and McKesson have pointed to four particular drugs with particularly large increases in AWP during the first year of the Scheme...Dr. Willig does not present, for comparison, drug *not* subject to the scheme that also had comparable increases in AWP, increases which could not be take as a signal for the Scheme.²⁵

Dr. Hartman is suggesting that I compare AWP increases for Appendix A drugs to AWP increases for Non-Appendix A Drug. I did this in the May 2007 Willig Declaration. In that Declaration I analyzed average AWP increases for Appendix A drugs that had ratio changes in each given year throughout the class period and average AWP increases for Non-Appendix A drugs in each given year throughout the class period.²⁶ That analysis showed that in 2002, the year with the greatest number of FDB ratios changed from 1.20 to 1.25, the overall average AWP increase for Appendix A drugs was 11.53 percent and the average AWP increase for Non-Appendix A drugs was only 8.90 percent.²⁷ Therefore, the AWP increases for Appendix A drugs was greater than the increases in Non-Appendix A drugs.

25. September 2007 Hartman Declaration, Attachment D, p. 37, ¶51.

26. May 2007 Willig Declaration, Table A1.

27. Id.

APPENDIX 4

APPENDIX 4

Statistical Appendix

I. COMPARISONS OF CHANGES IN REIMBURSEMENTS FOR FOUR SELECT DRUGS USING GE GROUP LIFE ASSURANCE COMPANY AND CIGNA CLAIMS DATA

1. As I discuss in Section IV, Dr. Hartman erroneously uses the data from IMS and FDB on four select drugs to calculate an estimate of the change in reimbursement amounts paid by TPPs relative to WAC. The four drugs are Lipitor (10mg and 20mg), Plavix (75mg), Prevacid (30mg), and Wellbutrin SR (150mg). From this he concludes that there is “no evidence of push-back in the inflation.”¹ More specifically, he finds that the ratio of reimbursement amounts (AA) to WAC for the four drugs increased in the months after the implementation of the alleged scheme.

2. I tested this assumption by applying Dr. Hartman’s same methodology to claims data from GE Group Life Assurance Company (“GE”), and Cigna.² Using these data, I find results that contradict Dr. Hartman’s findings using IMS data. These results are consistent with the view that there were market responses or “push-back” by TPPs resulting from the increase in the AWP/WAC markup. For example, I calculate the difference of the average AA/WAC ratio change for Lipitor 10mg in the six months prior to the date of the markup to the average of the first six months after the markup based on claims data. The results from the GE data show an increase in the ratio over this time period of [REDACTED] percent. The results from the Cigna data show an increase in the ratio of

1. September 2007 Hartman Declaration, Attachment F, at ¶19d.

2. These data were originally produced as part of discovery in the AWP MDL litigation, and later produced to McKesson in this case by the plaintiffs.

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■ percent. By months 19 to 24 after the date of the AWP/WAC markup, the comparison in the GE data shows an increase in the ratio of only ■ percent while the comparison in the Cigna data shows an increase in the ratio of ■ percent. Both of these comparisons indicate that the increase in the ratio is smaller in the later months compared to the initial six months. I find similar patterns in the other selected drugs. See Tables 1 and 2, and Figures 1 and 2. In comparison, the results of Dr. Hartman's analysis show an increase of ■ percent in the change in the average AA/WAC ratio for Lipitor 10mg in the first six months after the increase in the ratio. By months 19 to 24 after the date of the AWP/WAC markup, the comparison in Dr. Hartman's IMS data shows an increase in the ratio of ■ percent. In contrast, this comparison indicates that the increase in the ratio is slightly larger in the later months compared to the initial six months. He finds similar patterns in the other selected drugs using his IMS data.

3. In addition to calculating the comparisons of the ratio changes, I calculate directly the trend in the average monthly discount off AWP and average monthly dispensing fee. In general, I find that, although the average monthly dispensing fee is relatively flat during this time period, the average monthly discount off AWP for these drugs is increasing. For example, the comparison of the average monthly discount off AWP for Lipitor 10mg in the GE data shows that the average discount increased from ■ percent in the six months prior to the date of the markup to ■ percent in the last six months of the second year after the date of the markup. The comparison in the Cigna data shows that the average discount increased from ■ percent in the six months prior to the date of the markup to ■ percent in the last six months of the second year after the date of the markup. I find similar patterns of flat average dispensing fees in the GE

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data and the Cigna data for most of the other select drugs. In addition, I find similar patterns increasing average monthly discounts off AWP for the other select drugs in the GE data and for some of the other select drugs in the Cigna data. See Tables 3 and 4.

II. COMPARISON OF RESULTS FROM DR. HARTMAN'S FULLY INTERACTED REGRESSION MODEL USING THE GE AND CIGNA CLAIMS DATA

4. Dr. Hartman claims that another way to measure TPP push-back on the increase in the AWP/WAC markup is to analyze the change in the reimbursement rate (AA) relative to the AWP through the use of a linear regression model. He believes that if there was push-back by TPPs, then he would find that the reimbursement rates relative to the AWP (*i.e.*, AA/AWP) declined during the class period. If he does not find this result, then he would conclude that there was no push-back by TPPs.

5. He specifies a regression model in his report that estimates the trend in the reimbursement rate relative to AWP over the class period. In his preferred specification, he allows the trend for each of the drug/dosage combinations to be estimated separately. After correcting the error structure for heteroskedasticity, he finds that of the 278 drug/dosages in his regression data, only 89 of the trends (32 percent of the drug/dosages) are negative and significant. See Table 5. He concludes that “[h]ence, at this level of disaggregation there is absolutely no evidence of systematic “push-back” or recoupment for Appendix A drugs.”³ Using the GE data and his basic specification, I find that of the 135 NDCs with data every month, ■ of the trends ■ percent of the NDCs) are negative and significant. See Table 6. Using the Cigna data, I find that of the 366 NDCs with data every period, ■ of the trends ■ percent of the NCDs) are negative and significant.

3. September 2007 Hartman Declaration, Attachment F, at ¶33.

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See Table 7. Assuming Dr. Hartman's model is correct, I conclude the evidence using the GE data and the Cigna data are consistent with push-back by TPPs.

III. COMPARISON OF RESULTS FROM DR. HARTMAN'S STACKED REGRESSION MODEL USING THE GE AND CIGNA CLAIMS DATA

6. Initially, Dr. Hartman estimates a stacked regression model assuming a common trend in the reimbursement rates relative to AWP across all drug/dosage combinations during the class period. This common trend can be interpreted as the average trend across all drug/dosage combinations. He appears to reject this stacked model because of drug-specific competitive factors. Nonetheless, he finds that after he estimates this model that the average decline in the reimbursement rate relative to AWP over the class period was [REDACTED] percentage points. This reduction is also found to be statistically significantly different from zero. As I explain in Section IV.B.iv, the choice of whether to use the stacked regression or the individual regression models depends on the empirical question being asked. If the analyst is interested in knowing whether the average trend in the AA/AWP across drugs is declining, then the appropriate statistical model for testing such a hypothesis is the stacked model.

Using the GE and Cigna data, I find much larger and statistically significant reductions in the reimbursement rate relative to AWP. First, I estimate that on average across NDCs, GE's reimbursement rate relative to AWP declined [REDACTED] percentage points from July 2001 through April 2004. See Table 8. Second, I estimate that on average across NDCs, Cigna's reimbursement rate relative to AWP declined [REDACTED] percentage points from July 2001 through July 2004. See Table 9. Therefore, using these claims data

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I find that average reduction is between [REDACTED] and [REDACTED] times greater compared to the average reduction Dr. Hartman estimated using the IMS data.

Table 1
Percentage Change in Price Paid/WAC After Ratio Change

| Drug | NDC | Drug Label | Rank | Volume | Date of Ratio Change | Period 1 Actual-But For | Period 2 Actual-But For | Period 3 Actual-But For | Period 4 Actual-But For | Period 1 Percentage Change | Period 2 Percentage Change | Period 3 Percentage Change | Period 4 Percentage Change |
|------------|-------------|---------------------|------|--------|----------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| LIPITOR | 00071015523 | LIPITOR 10MG | | | JAN02 | | | | | | | | |
| LIPITOR | 00071015623 | LIPITOR 20MG | | | JAN02 | | | | | | | | |
| PLAVIX | 6365317101 | PLAVIX 75MG | | | JAN02 | | | | | | | | |
| PREVACID | 00300304613 | PREVACID 30MG | | | JAN02 | | | | | | | | |
| WELLBUTRIN | 00173013555 | WELLBUTRIN SR 150MG | | | JAN02 | | | | | | | | |

Table 2
Percentage Change in Price Paid/WAC After Ratio Change

| Drug | NDC | Drug Label | Rank | Volume | Date of Ratio Change | Period 1 Actual-But For | Period 2 Actual-But For | Period 3 Actual-But For | Period 4 Actual-But For | Period 1 Percentage Change | Period 2 Percentage Change | Period 3 Percentage Change | Period 4 Percentage Change |
|------------|-------------|----------------------------|------|--------|----------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| LIPITOR | 00071015523 | LIPITOR 10MG TABLET | | | JAN02 | | | | | | | | |
| LIPITOR | 00071015623 | LIPITOR 20MG TABLET | | | JAN02 | | | | | | | | |
| PLAVIX | 63653117101 | PLAVIX 75MG TABLET | | | JAN02 | | | | | | | | |
| PREVACID | 00300304613 | PREVACID 30MG CAPSULE DR | | | JAN02 | | | | | | | | |
| WELLBUTRIN | 00173013555 | WELLBUTRIN SR 150MG TAB SA | | | JAN02 | | | | | | | | |

Figure 1a

Comparison of AWP, WAC, and Average Monthly Price Paid
Lipitor 10MG: NDC 00071015523

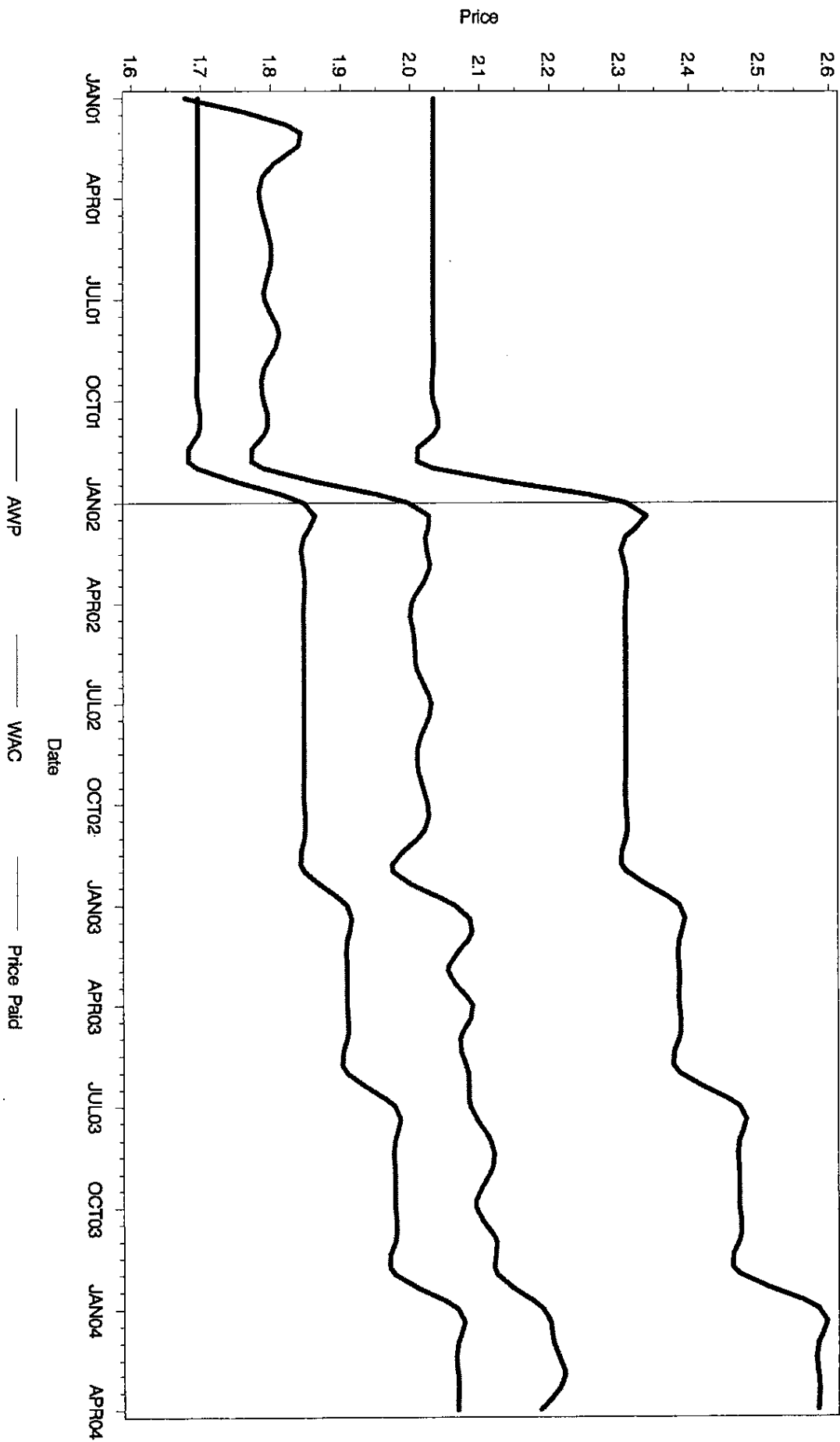


Figure 1b

Comparison of Price Paid/AWP and Price Paid/WAC
Lipitor 10MG: NDC 00071015523

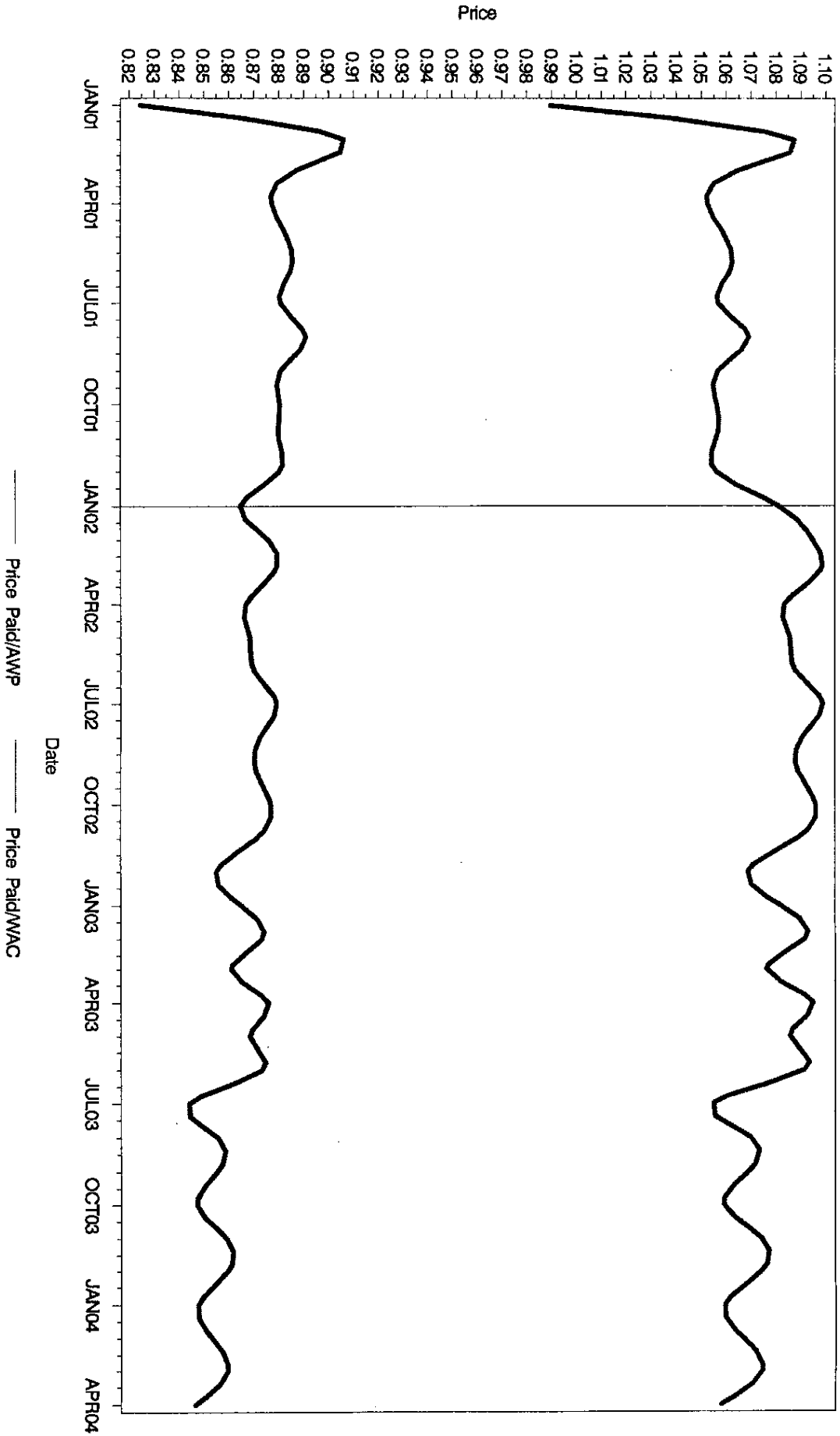


Figure 1c

Comparison of AWP, WAC, and Average Monthly Price Paid
Lipitor 20MG: NDC 00071015623

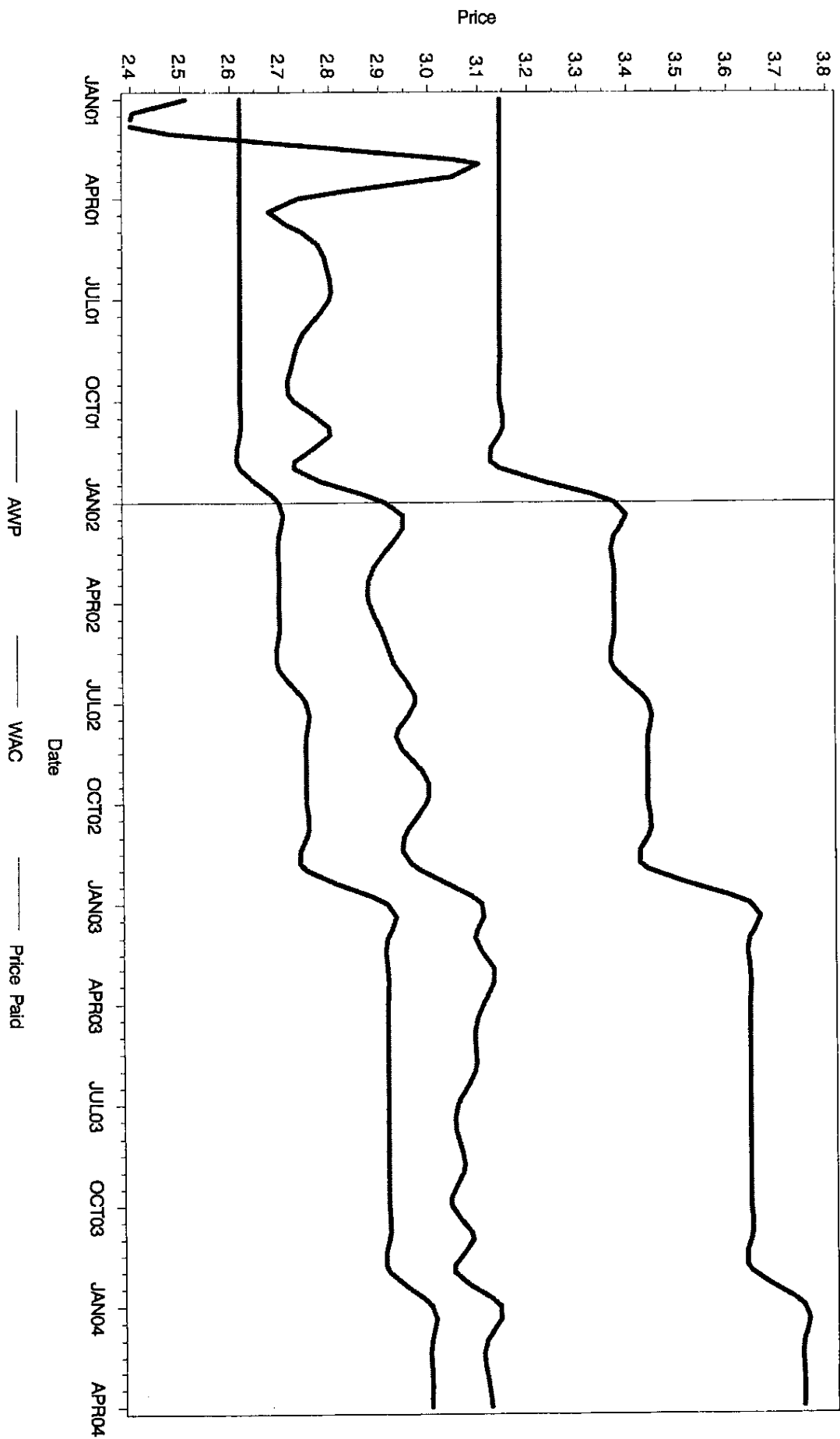


Figure 1d

Comparison of Price Paid/AWP and Price Paid/WAC
Lipitor 20MG: NDC 00071015623

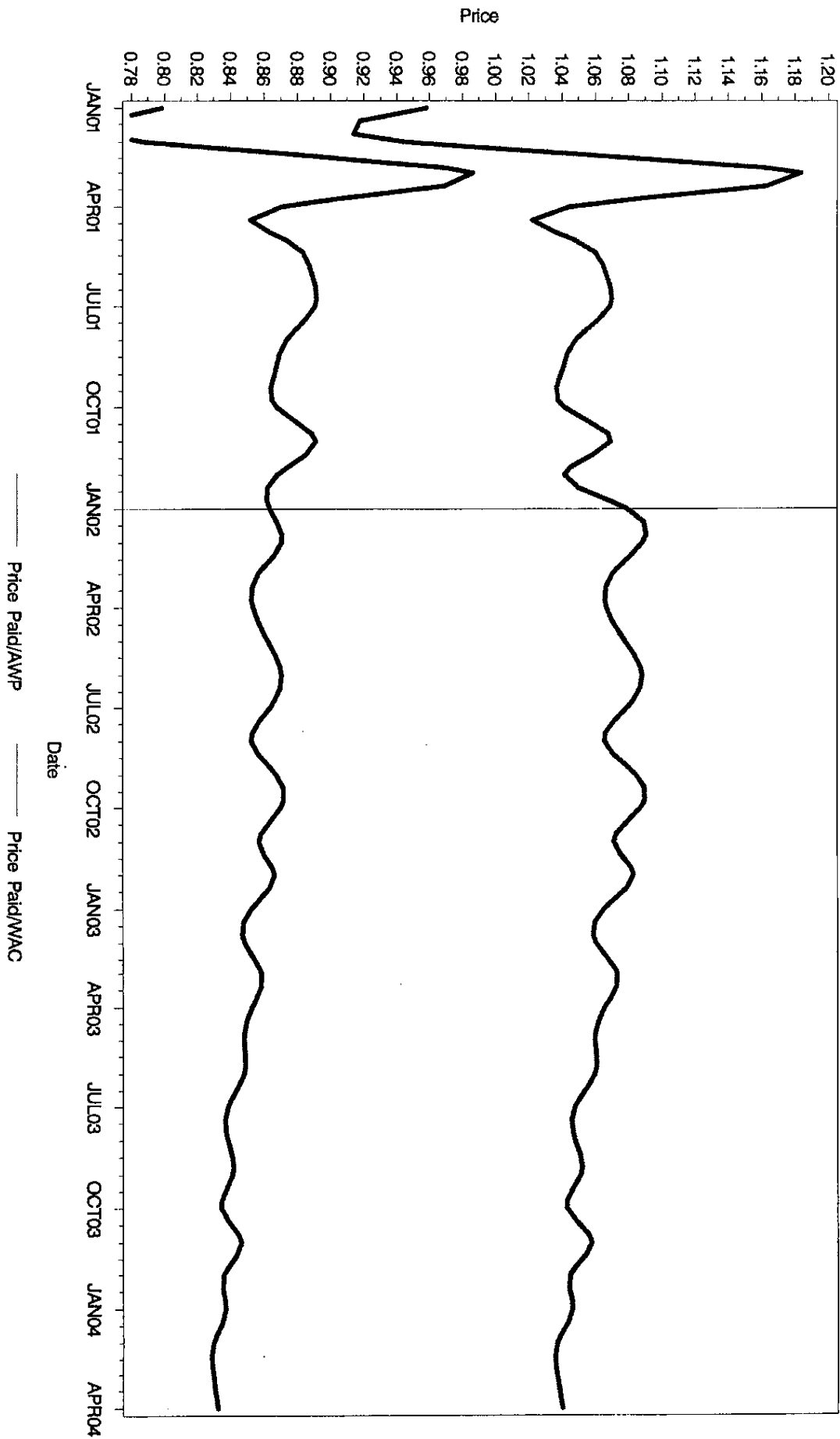


Figure 1e

Comparison of AWP, WAC, and Average Monthly Price Paid
Plavix 75MG: NDC 63653117101

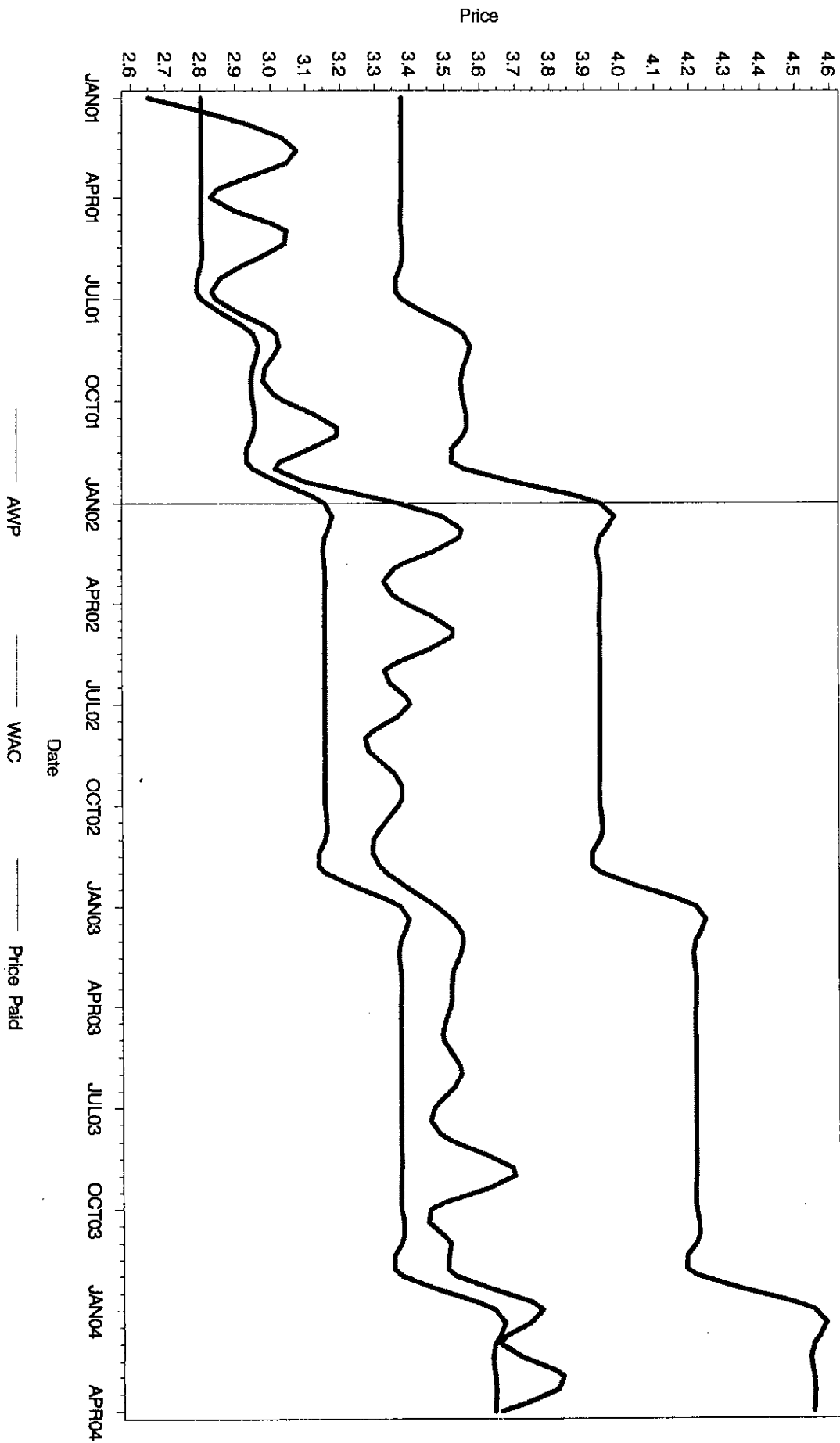


Figure 1f

Comparison of Price Paid/AWP and Price Paid/WAC
Plavix 75MG: NDC 63653117101

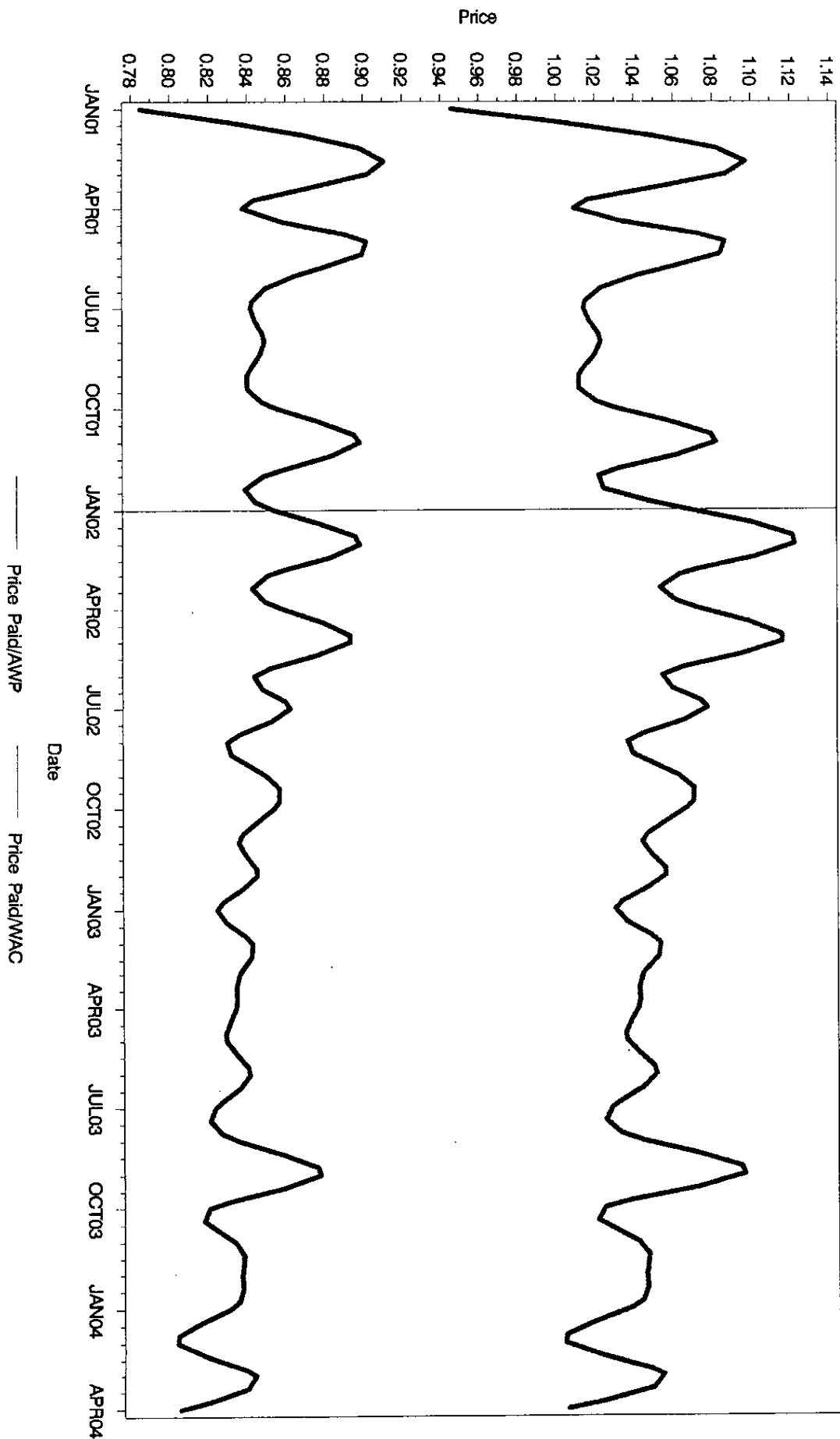


Figure 1g

Comparison of AWP, WAC, and Average Monthly Price Paid
Prevacid 30MG: NDC 00300304613

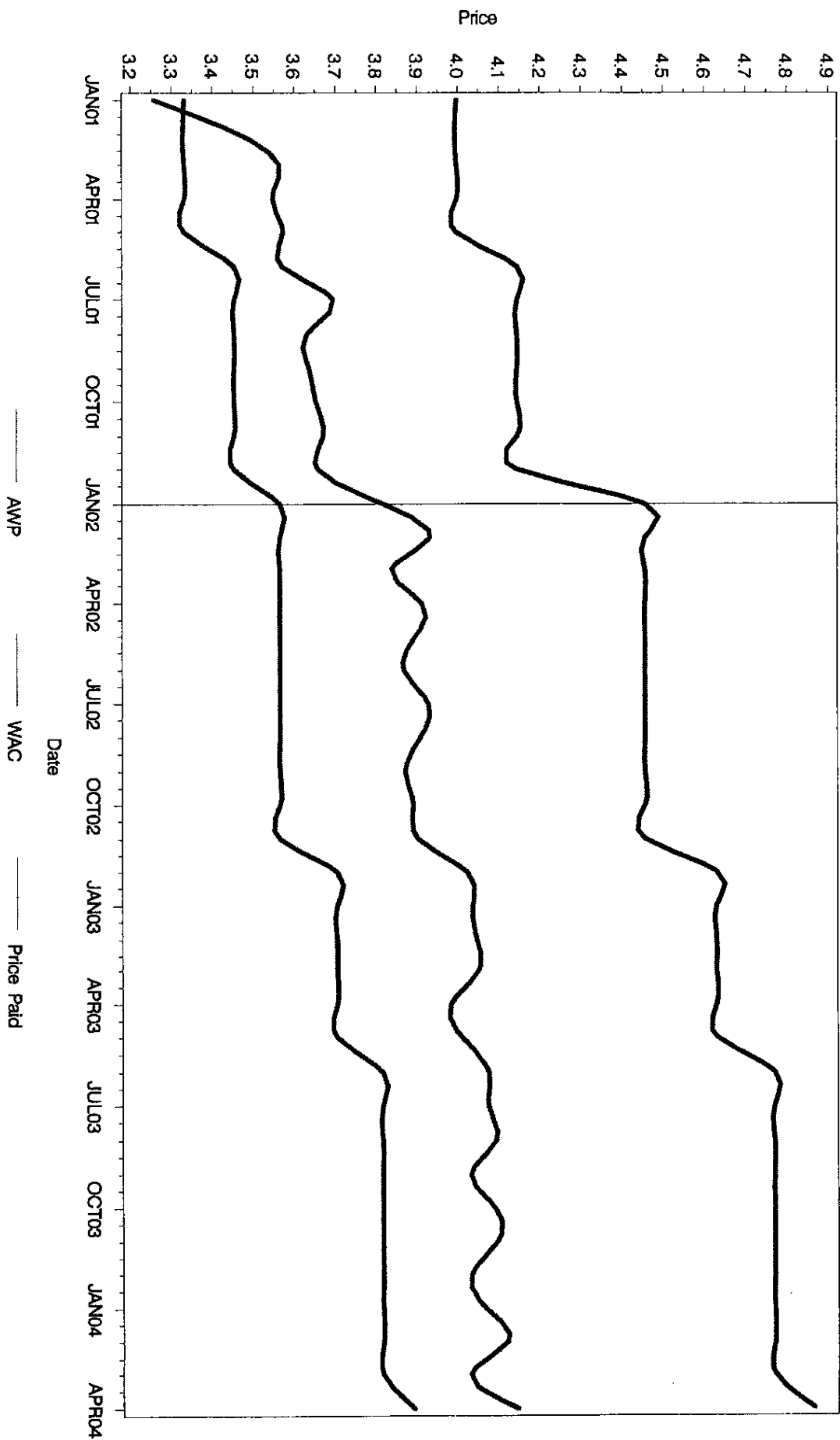


Figure 1h

Comparison of Price Paid/AWP and Price Paid/WAC
Prevacid 30MG: NDC 00300304613

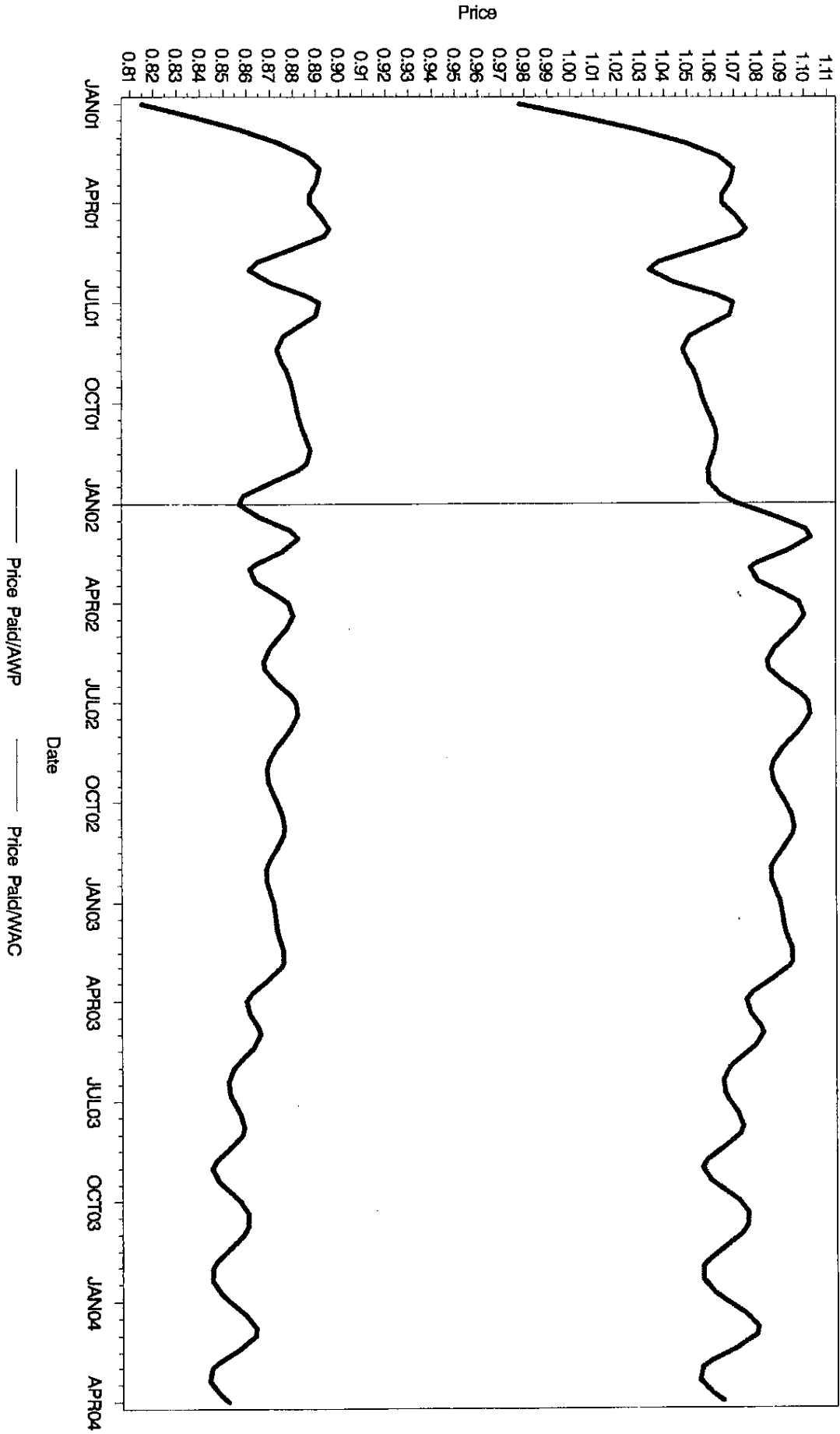


Figure 1i

Comparison of AWP, WAC, and Average Monthly Price Paid
Wellbutrin SR 150MG: NDC 00173013555

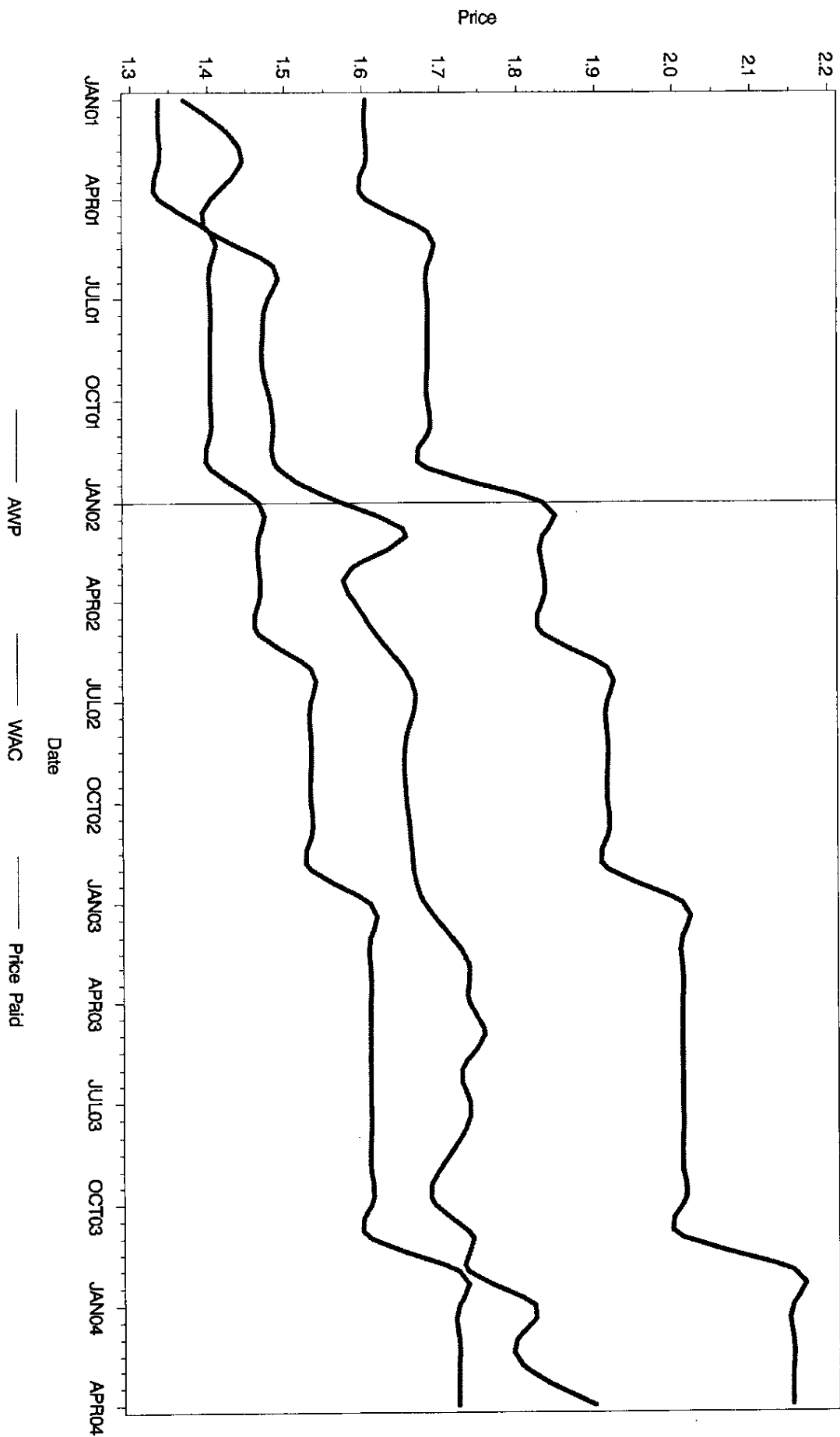


Figure 1j

Comparison of Price Paid/AWP and Price Paid/WAC
Wellbutrin SR 150MG: NDC 00173013555

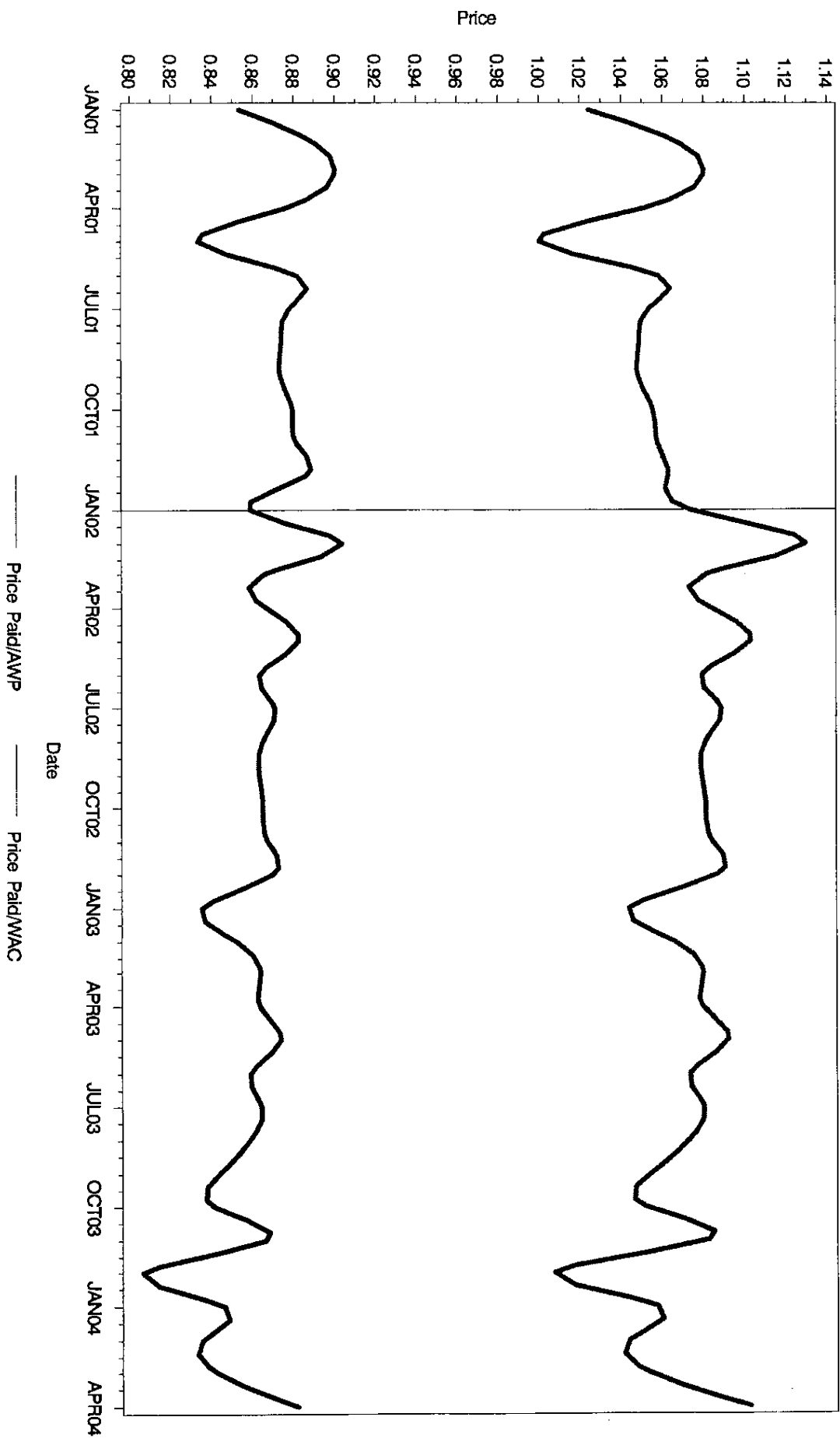


Figure 2a

Comparison of AWP, WAC, and Average Monthly Price Paid
Lipitor 10MG: NDC 00071015523

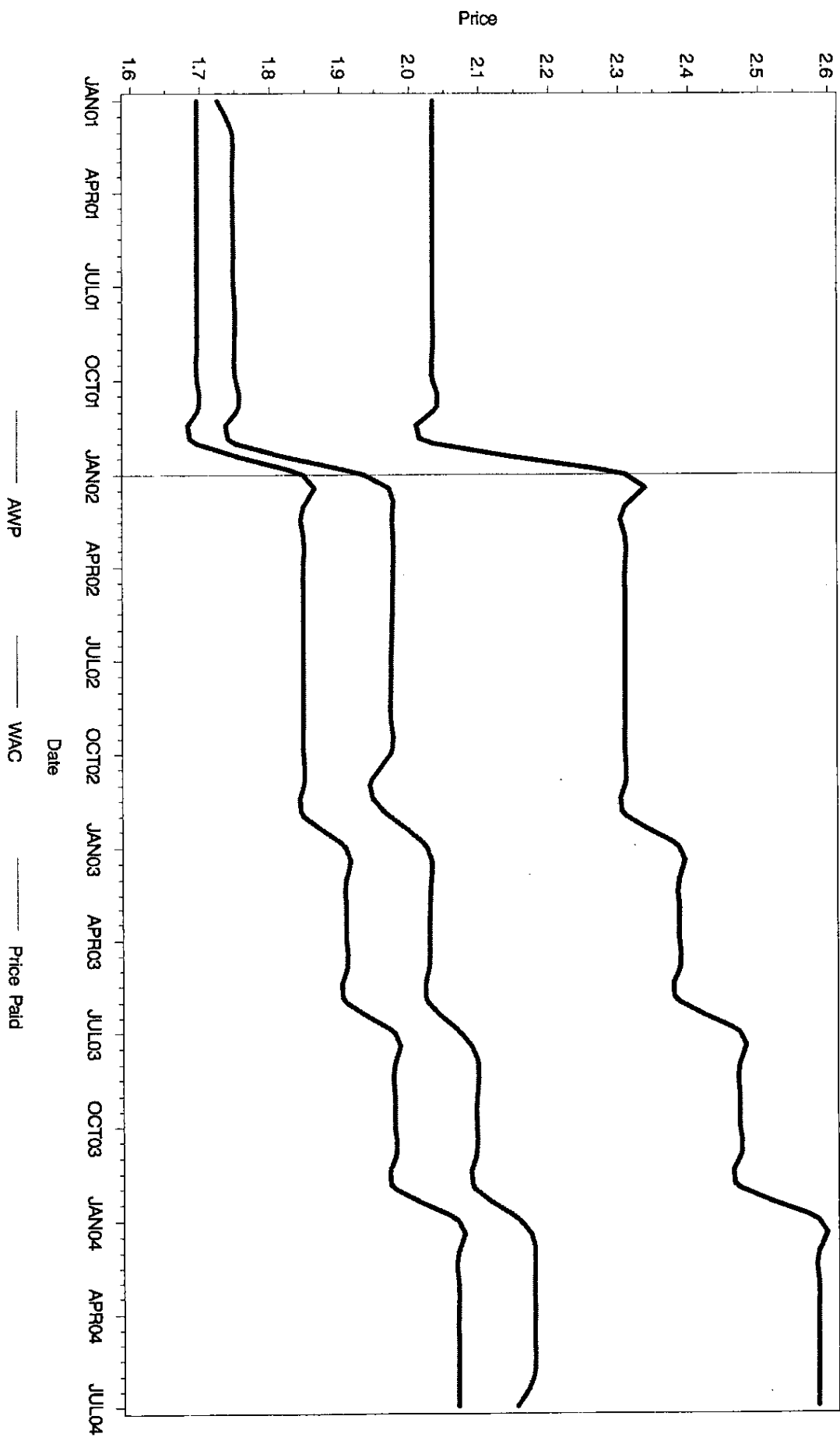


Figure 2b

Comparison of Price Paid/AWP and Price Paid/WAC
Lipitor 10MG: NDC 00071015523

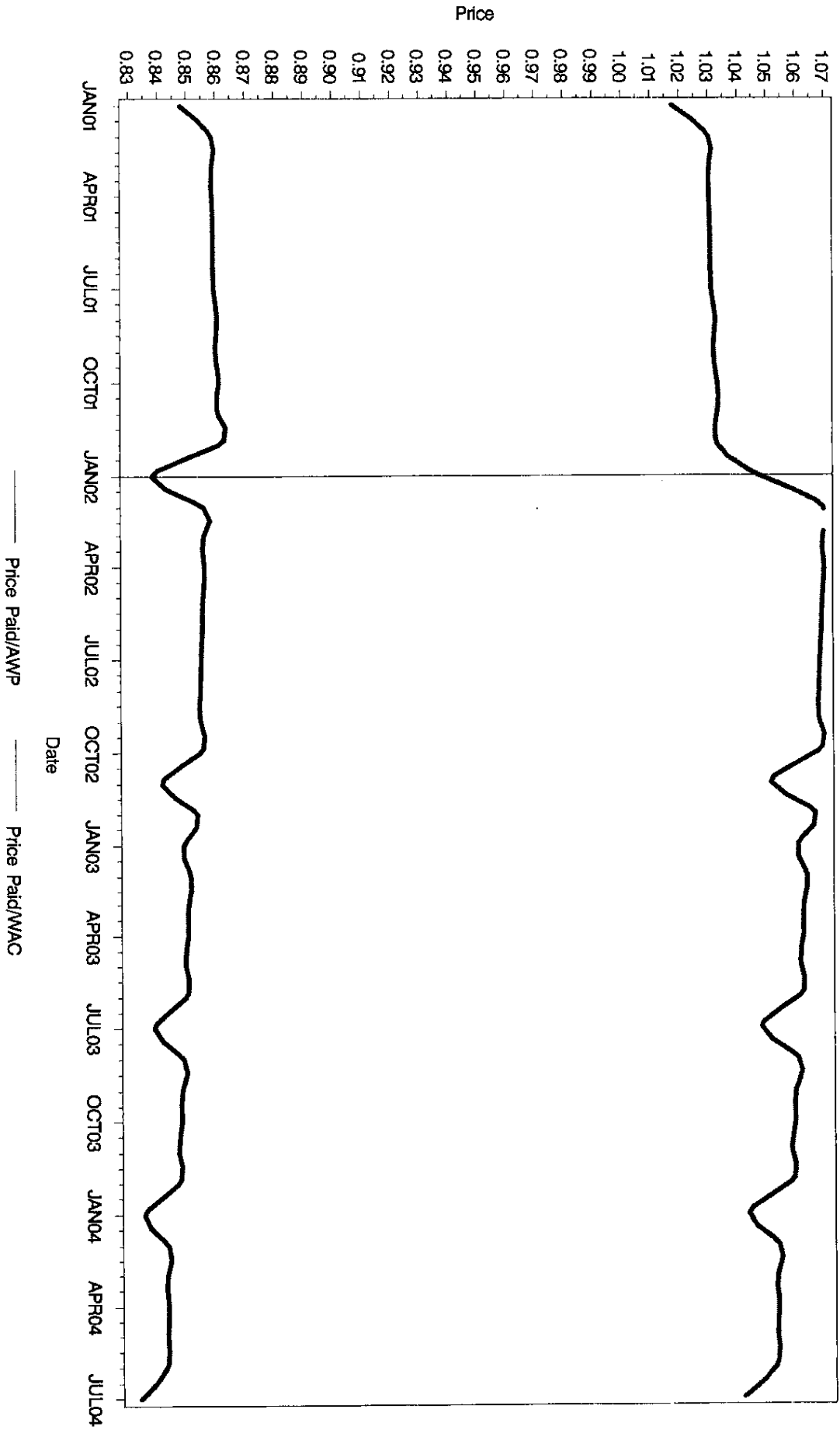


Figure 2c

Comparison of AWP, WAC, and Average Monthly Price Paid
Lipitor 20MG: NDC 00071015623

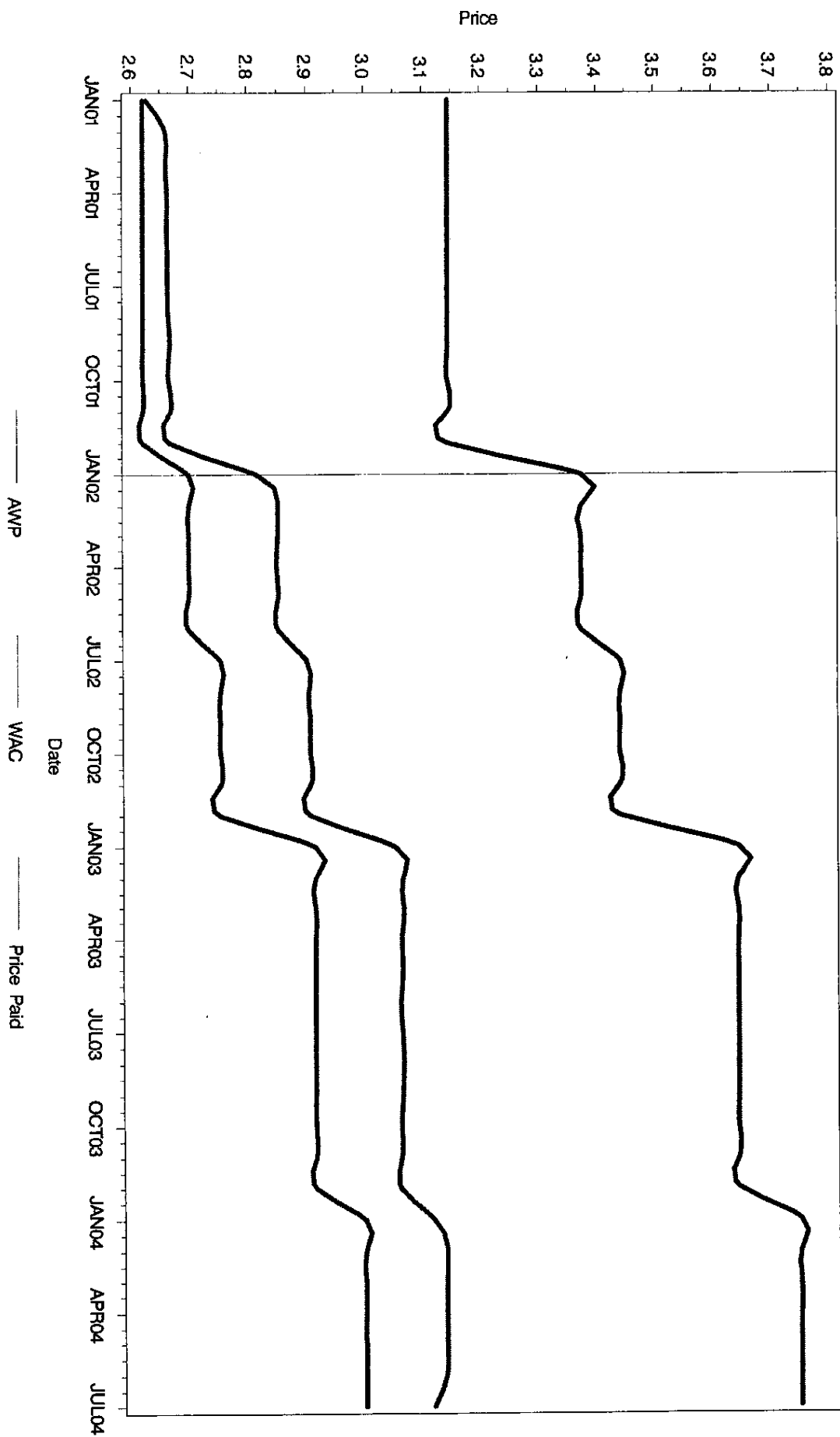


Figure 2d

Comparison of Price Paid/AWP and Price Paid/WAC
Lipitor 20MG: NDC 00071015623

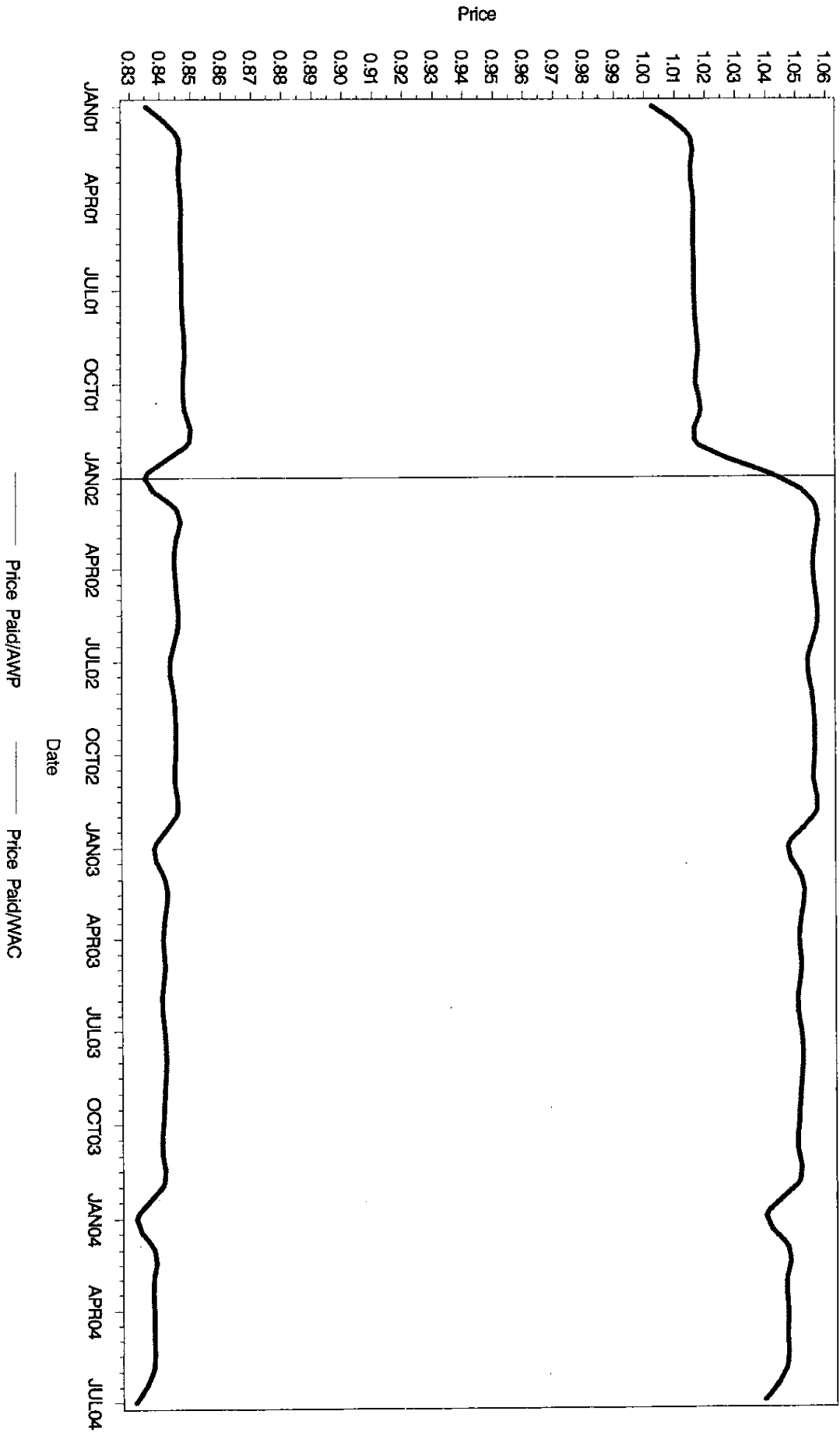


Figure 2e

Comparison of AWP, WAC, and Average Monthly Price Paid
Plavix 75MG: NDC 63653117101

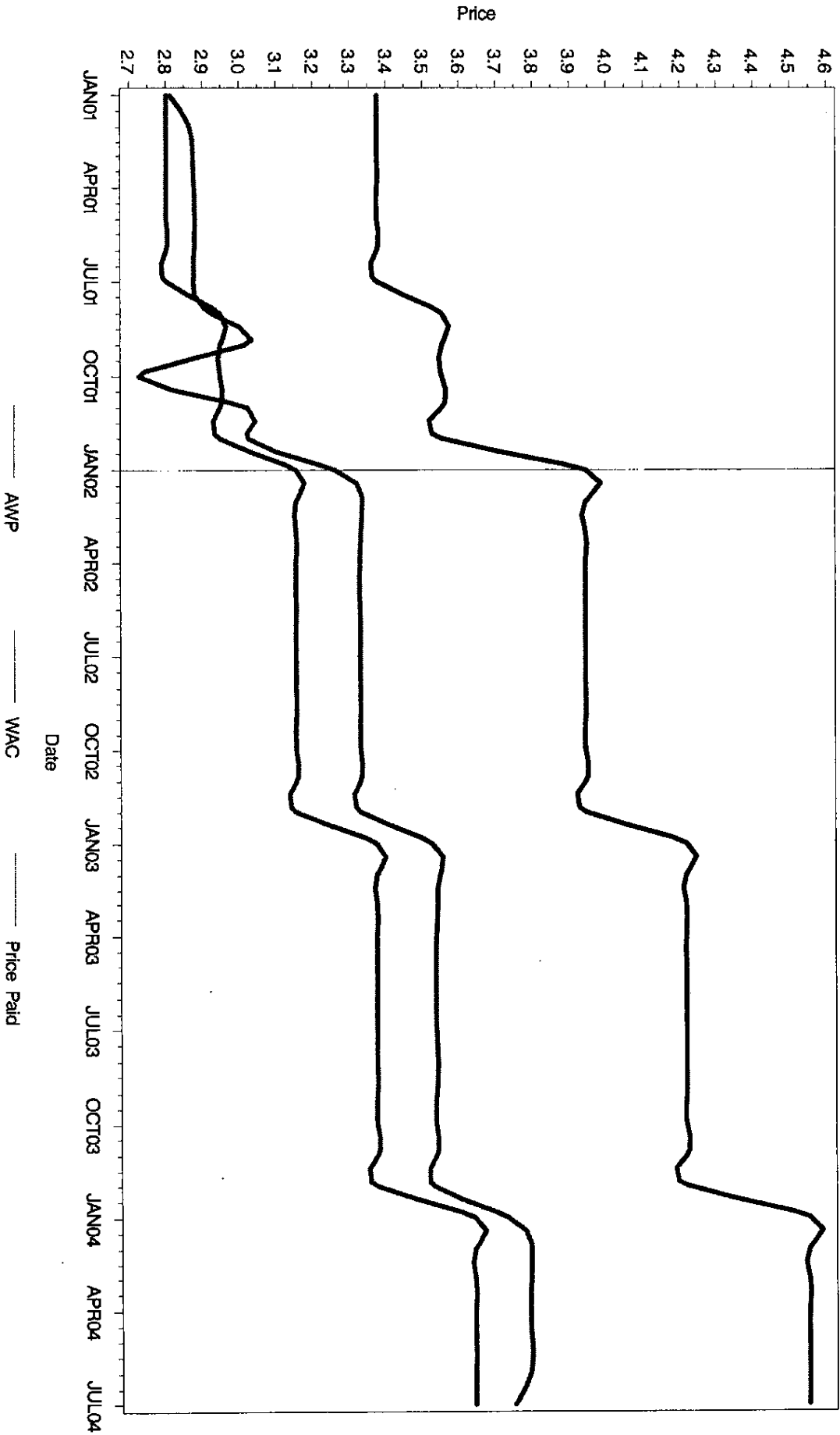


Figure 2f

Comparison of Price Paid/AWP and Price Paid/WAC
Plavix 75MG: NDC 63653117101

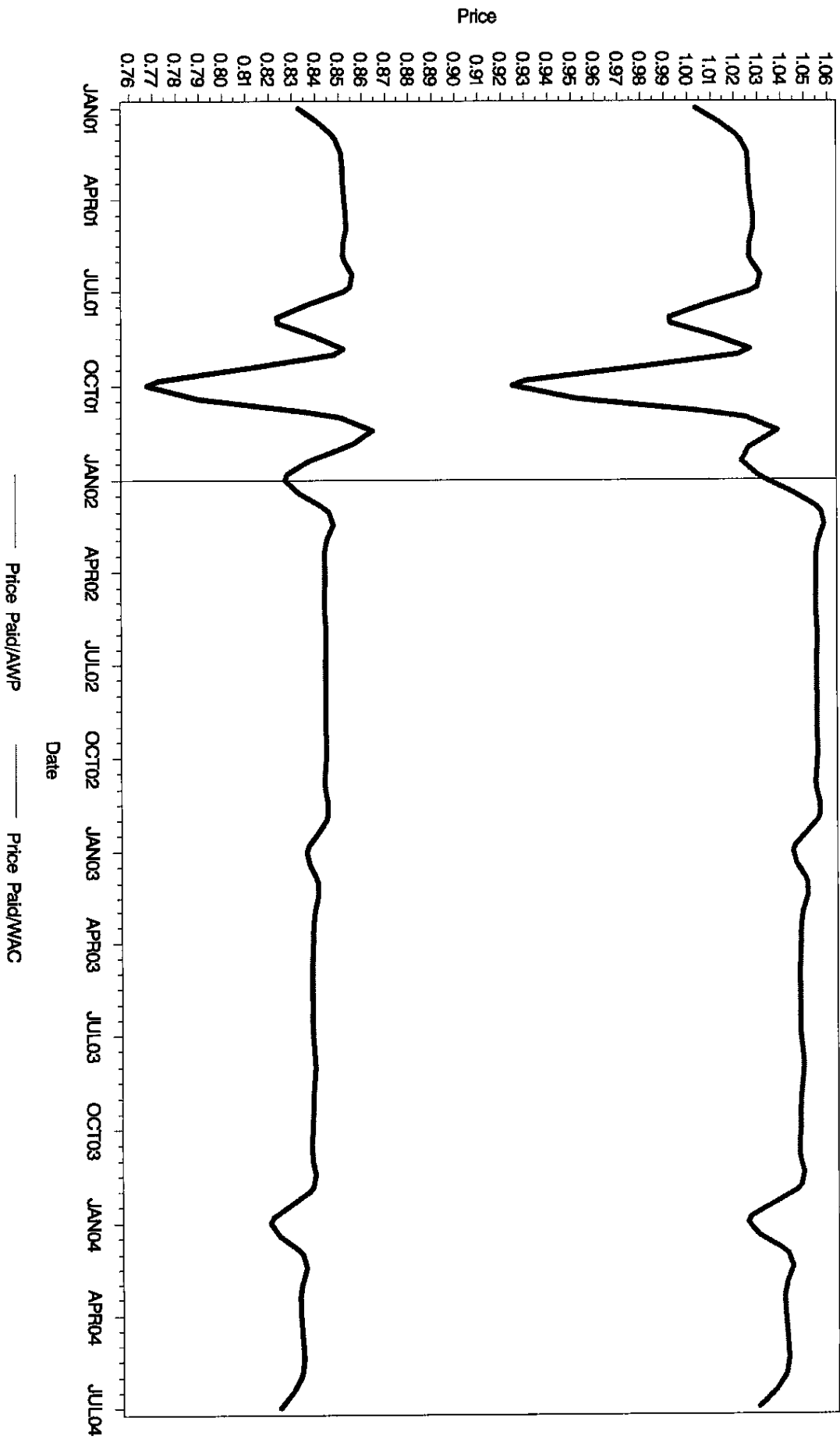


Figure 2g

Comparison of AWP, WAC, and Average Monthly Price Paid
Prevacid 30MG: NDC 00300304613

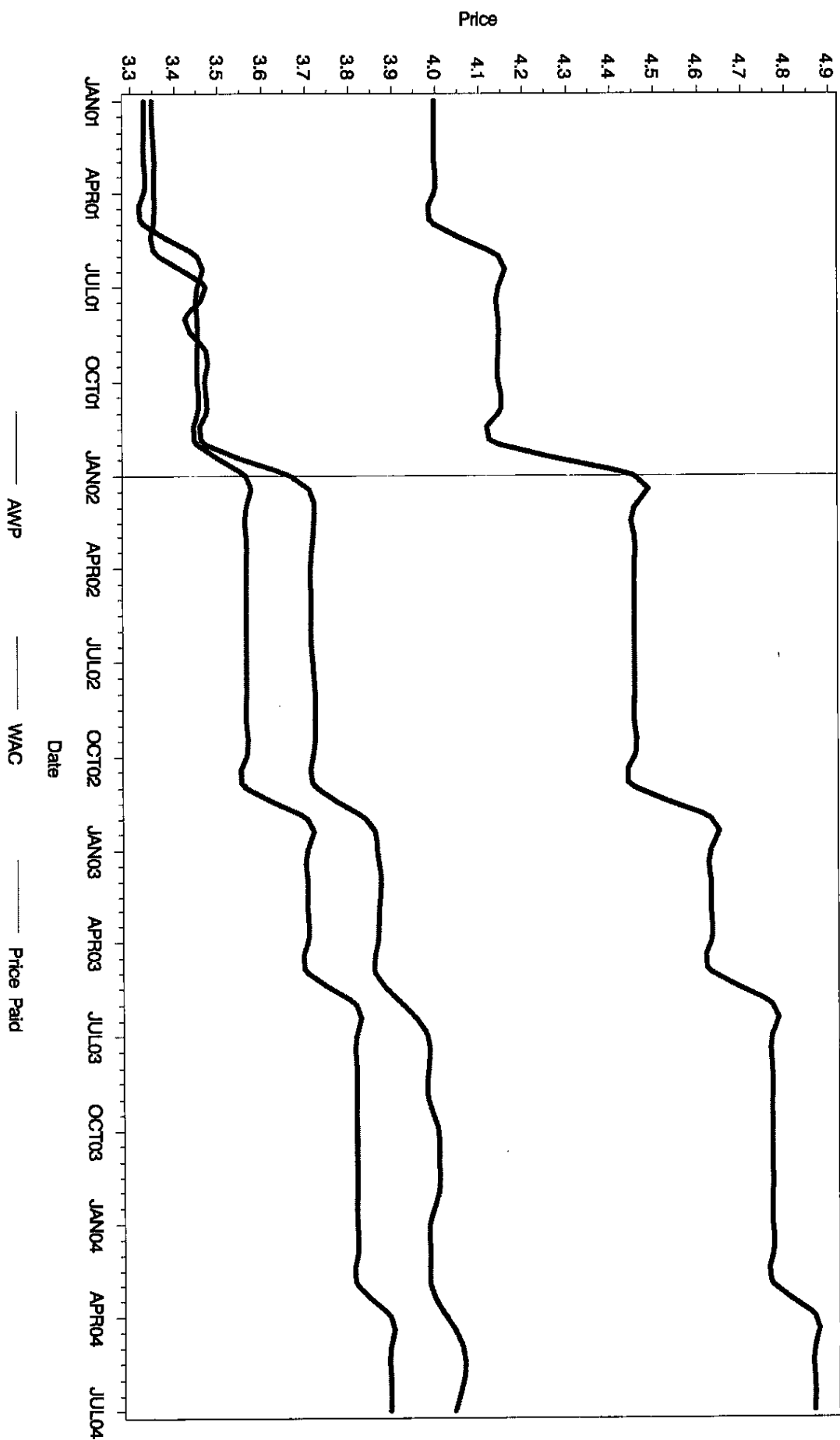


Figure 2h

Comparison of Price Paid/AWP and Price Paid/MAC
Prevacid 30MG: NDC 00300304613

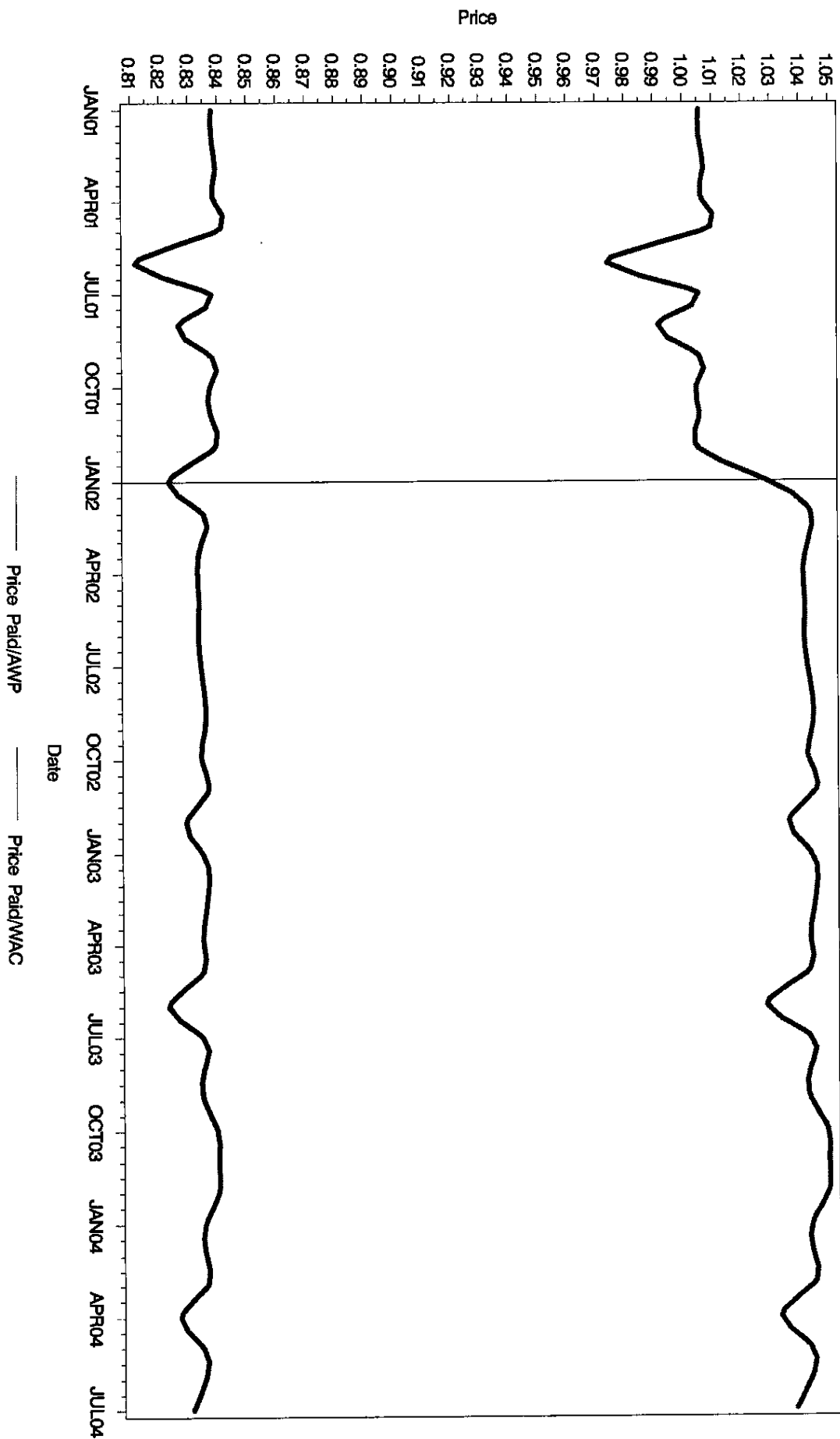


Figure 2i

Comparison of AWP, WAC, and Average Monthly Price Paid
Wellbutrin SR 150MG: NDC 00173013555

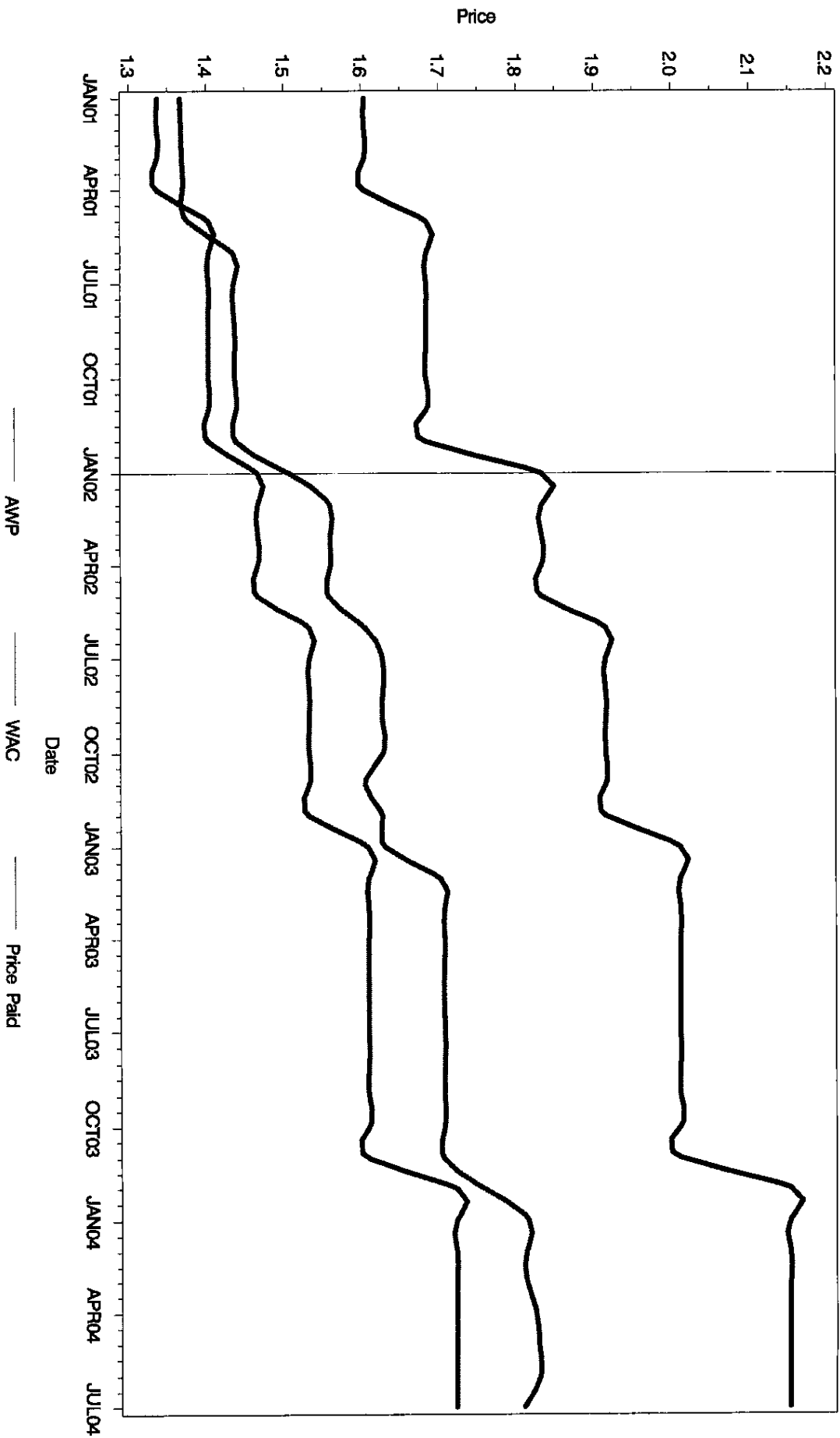
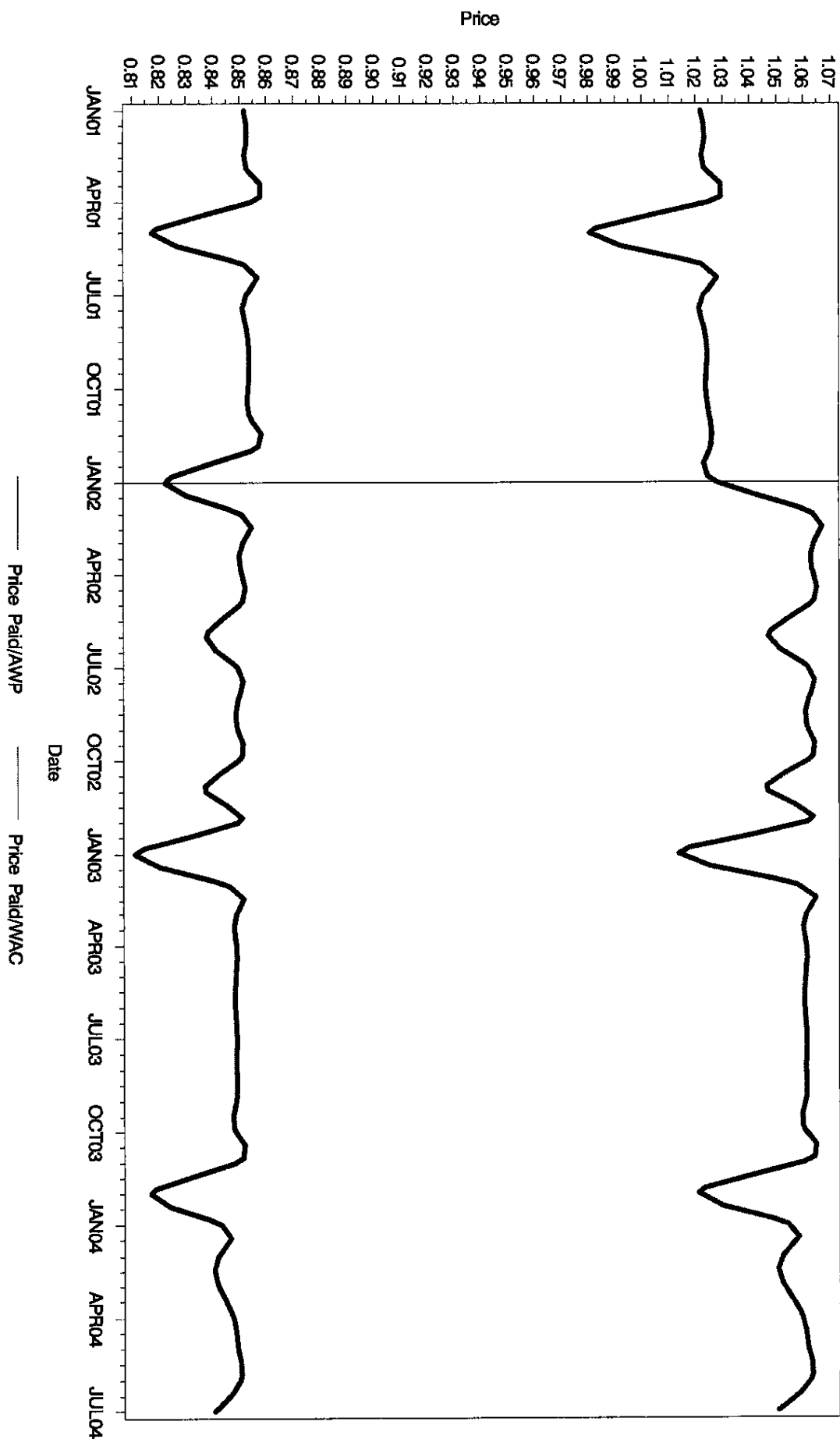


Figure 2j

Comparison of Price Paid/AWP and Price Paid/WAC
Wellbutrin SR 150MG: NDC 00173013555



[illegible]

1003

[illegible]

Table 1
Percentage Change in Price Paid/WAC After Ratio Change

| Drug | NDC | Drug Label | Rank | Volume | Date of Ratio Change | Period 1 Actual-But For | Period 2 Actual-But For | Period 3 Actual-But For | Period 4 Actual-But For | Period 1 Percentage Change | Period 2 Percentage Change | Period 3 Percentage Change | Period 4 Percentage Change |
|------------|-------------|---------------------|------|--------|----------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| LIPITOR | 00071015523 | LIPITOR 10MG | | | JAN02 | | | | | | | | |
| LIPITOR | 00071015623 | LIPITOR 20MG | | | JAN02 | | | | | | | | |
| PLAVIX | 6365317101 | PLAVIX 75MG | | | JAN02 | | | | | | | | |
| PREVACID | 00300304613 | PREVACID 30MG | | | JAN02 | | | | | | | | |
| WELLBUTRIN | 00173013555 | WELLBUTRIN SR 150MG | | | JAN02 | | | | | | | | |

Table 2
Percentage Change in Price Paid/WAC After Ratio Change

| Drug | NDC | Drug Label | Rank | Volume | Date of Ratio Change | Period 1 Actual-But For | Period 2 Actual-But For | Period 3 Actual-But For | Period 4 Actual-But For | Period 1 Percentage Change | Period 2 Percentage Change | Period 3 Percentage Change | Period 4 Percentage Change |
|------------|-------------|----------------------------|------|--------|----------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| LIPITOR | 00071015523 | LIPITOR 10MG TABLET | | | JAN02 | | | | | | | | |
| LIPITOR | 00071015623 | LIPITOR 20MG TABLET | | | JAN02 | | | | | | | | |
| PLAVIX | 63653117101 | PLAVIX 75MG TABLET | | | JAN02 | | | | | | | | |
| PREVACID | 00300304613 | PREVACID 30MG CAPSULE DR | | | JAN02 | | | | | | | | |
| WELLBUTRIN | 00173013555 | WELLBUTRIN SR 150MG TAB SA | | | JAN02 | | | | | | | | |

Figure 1a

Comparison of AWP, WAC, and Average Monthly Price Paid
Lipitor 10MG: NDC 00071015523

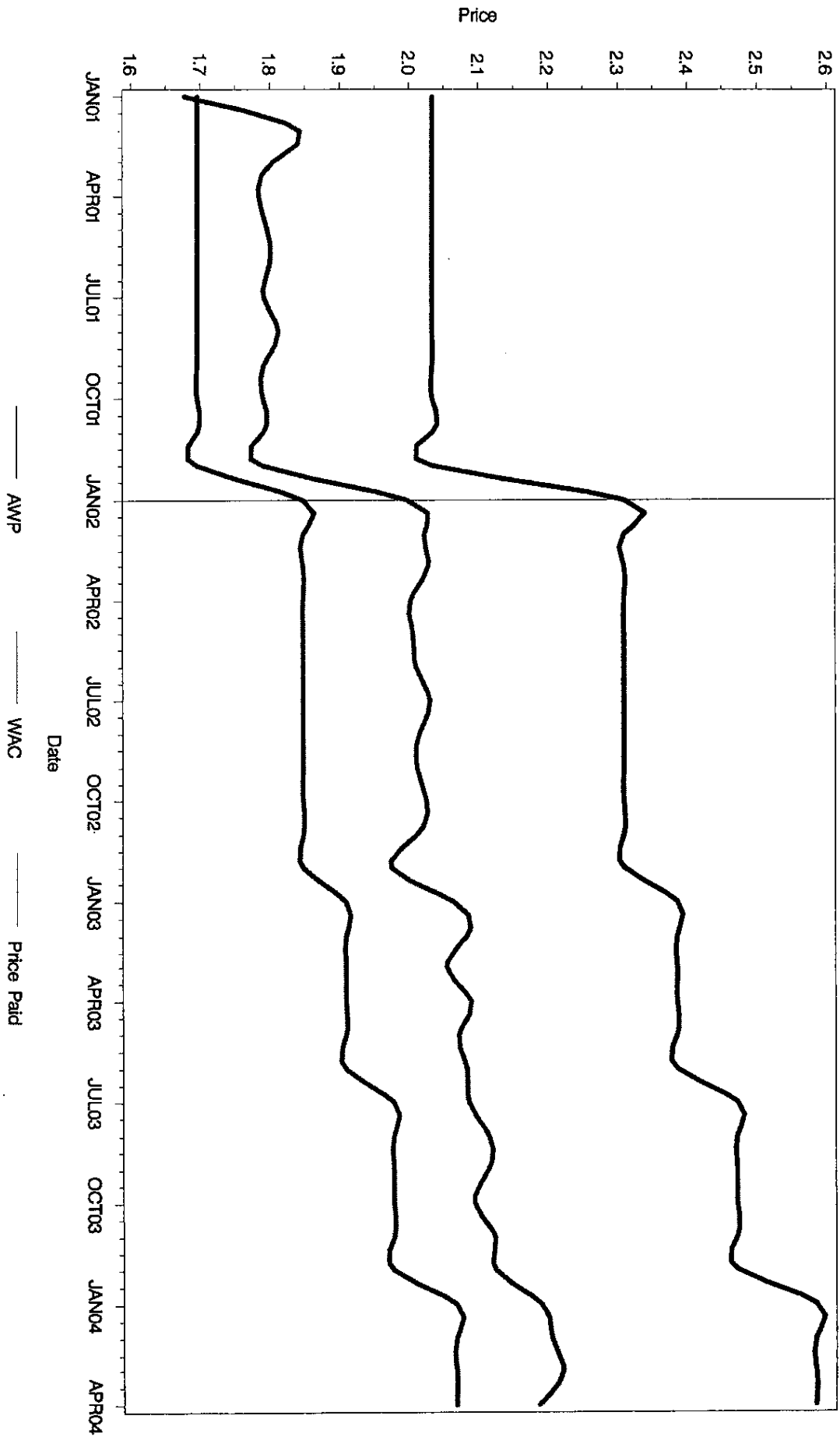


Figure 1b

Comparison of Price Paid/AWP and Price Paid/WAC
Lipitor 10MG: NDC 00071015523

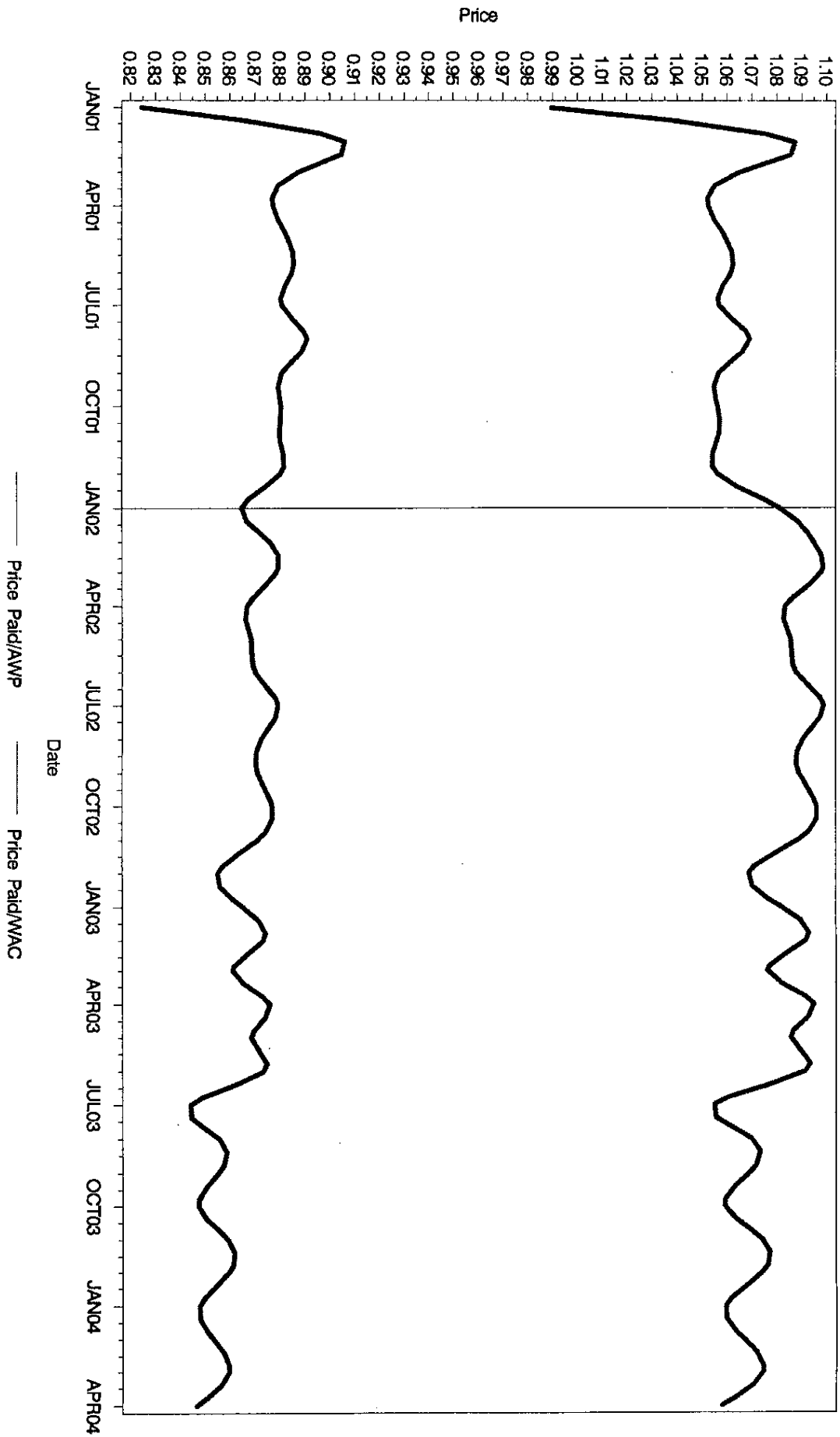


Figure 1c

Comparison of AWP, WAC, and Average Monthly Price Paid
Lipitor 20MG: NDC 00071015623

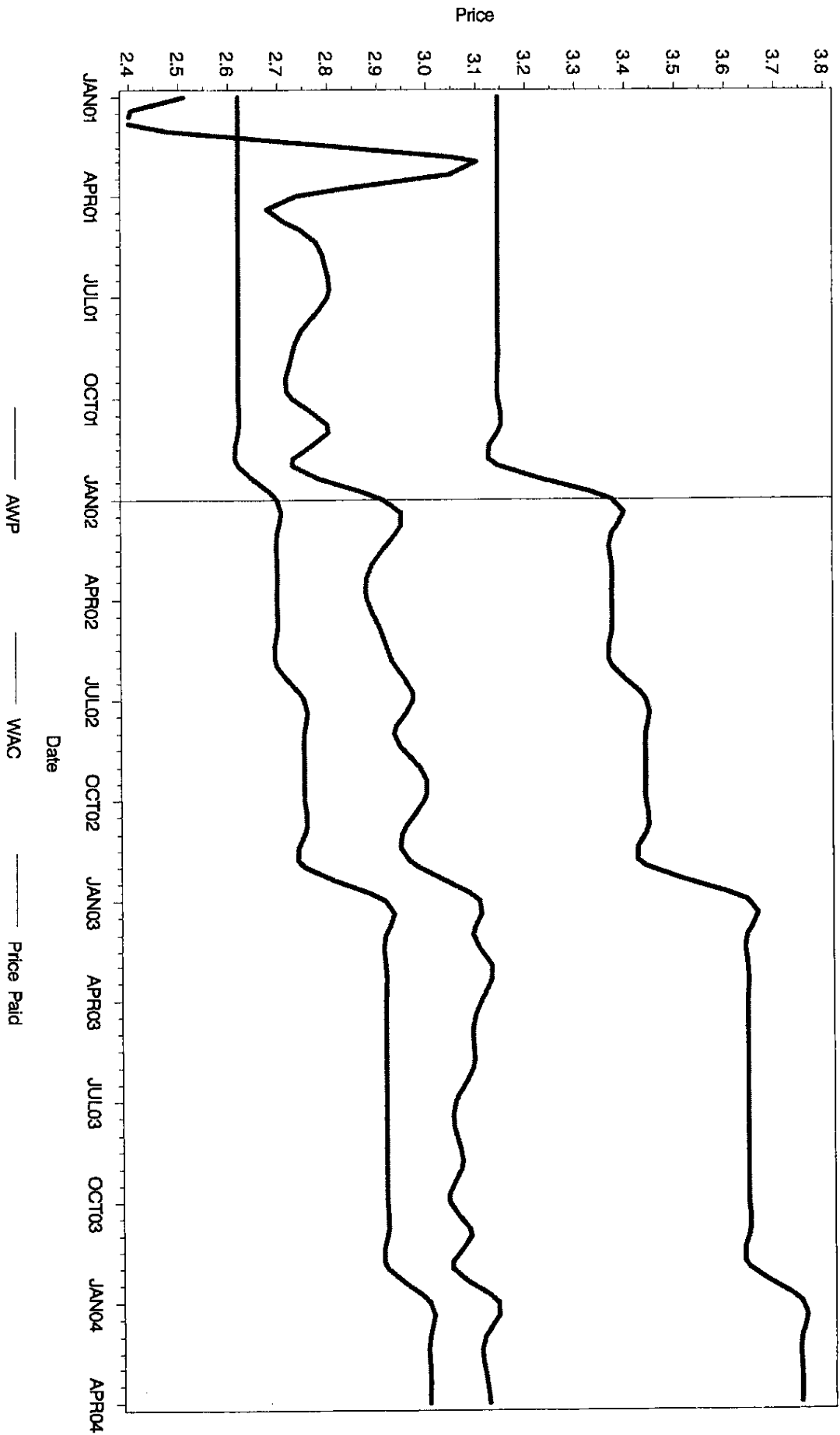


Figure 1d

Comparison of Price Paid/AWP and Price Paid/WAC
Lipitor 20MG: NDC 00071015623

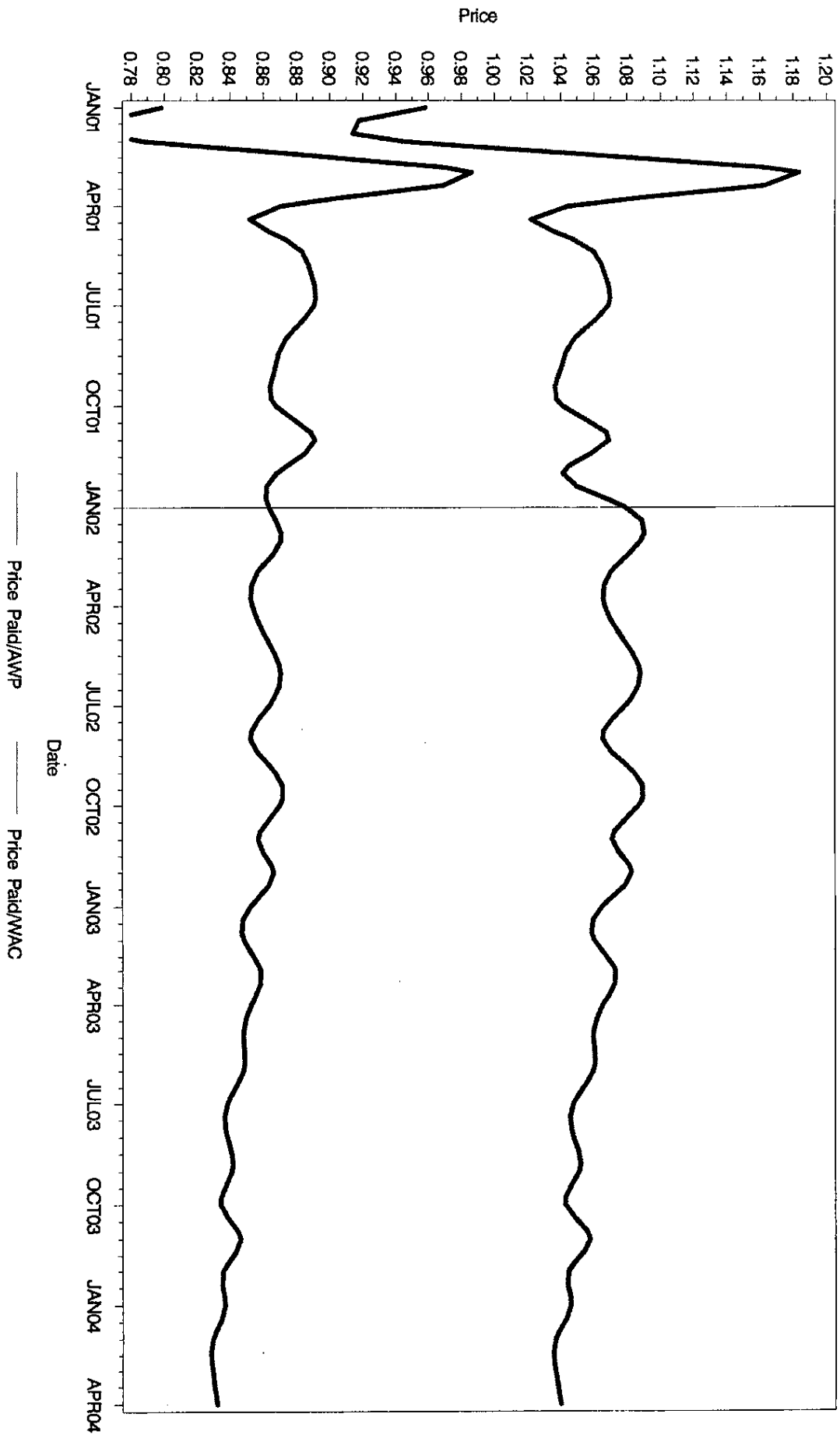


Figure 1e

Comparison of AWP, WAC, and Average Monthly Price Paid
Plavix 75MG: NDC 63653117101

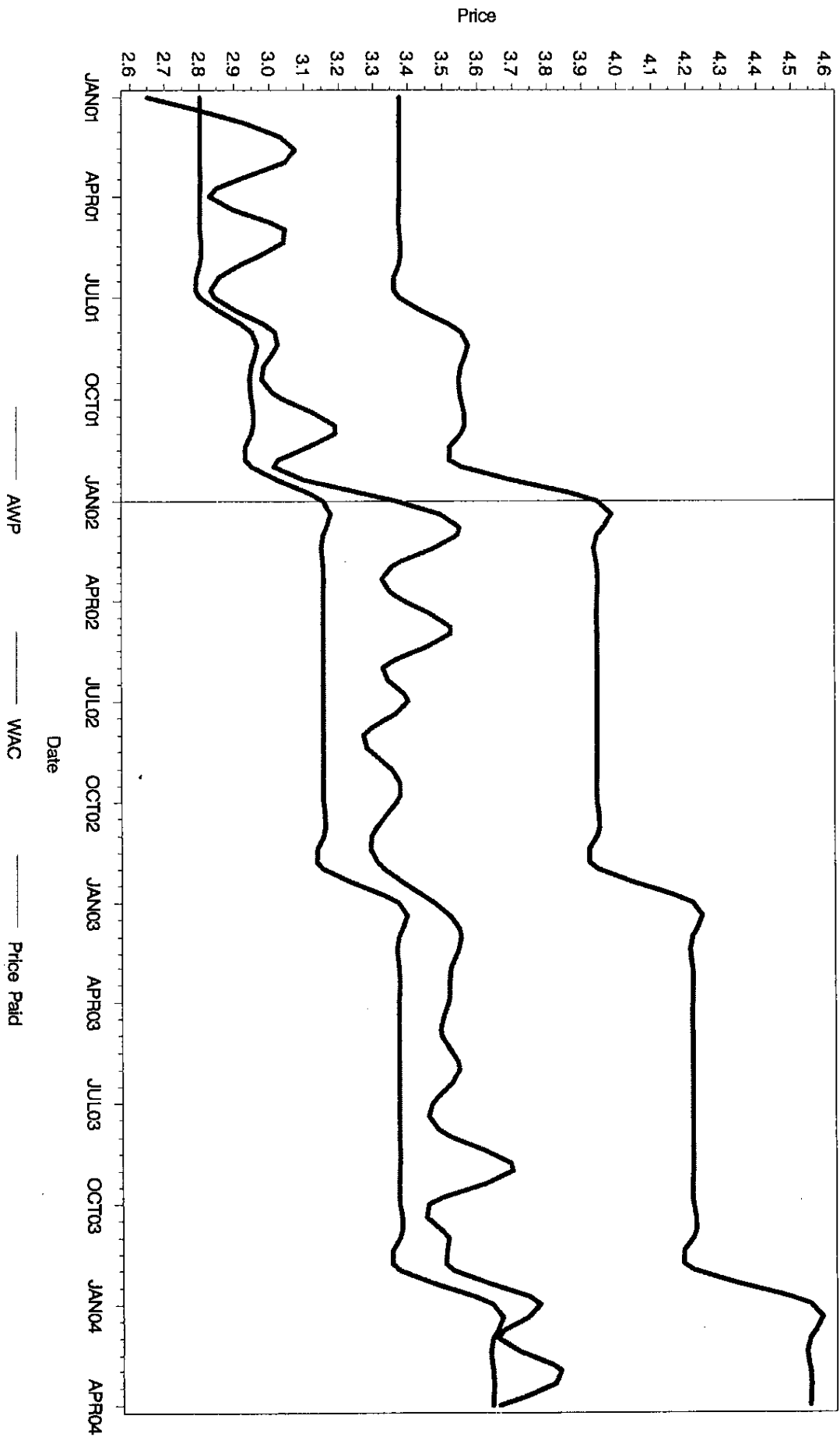


Figure 1f

Comparison of Price Paid/AWP and Price Paid/WAC
Plavix 75MG: NDC 63653117101

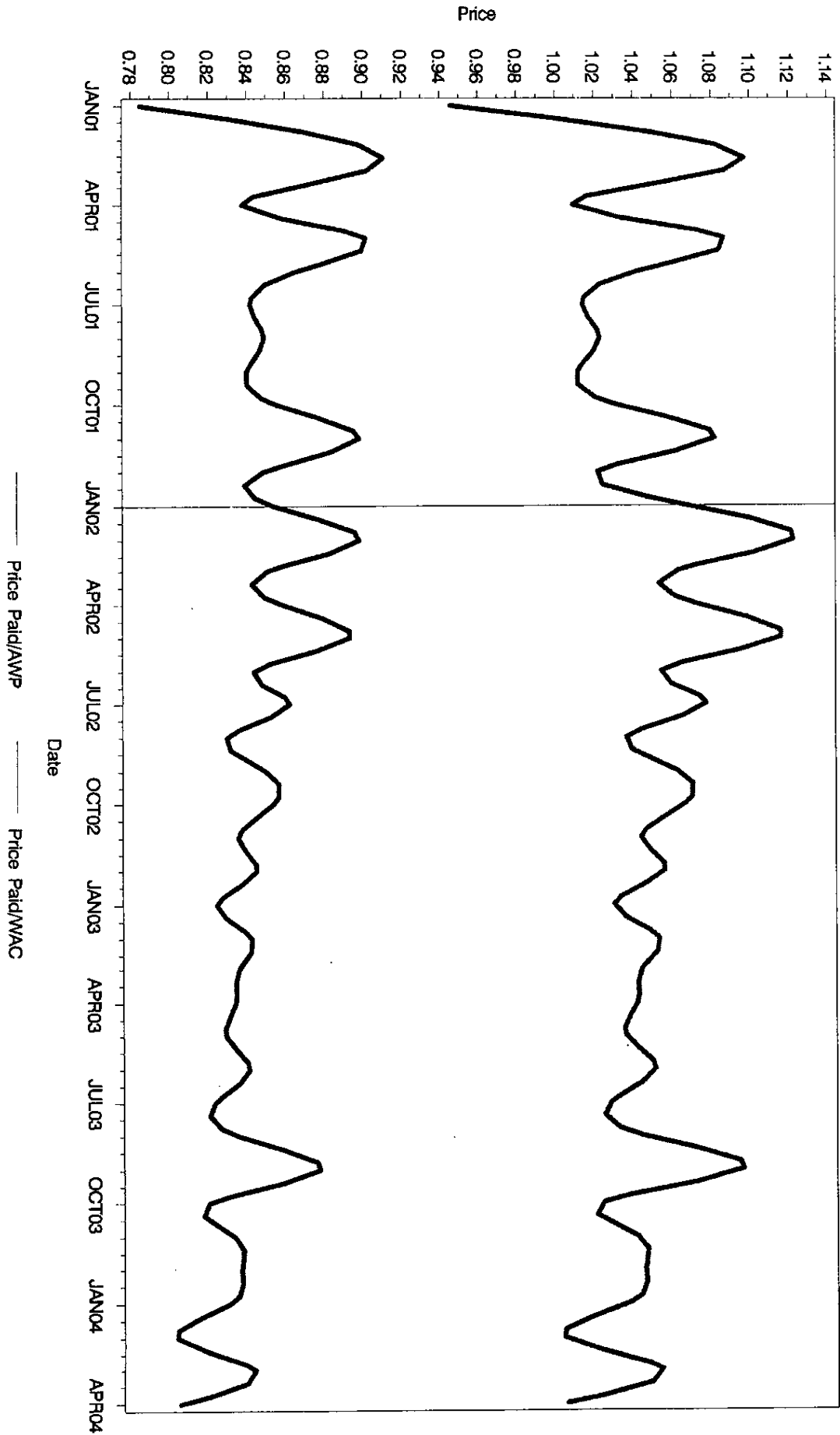


Figure 1g

Comparison of AWP, WAC, and Average Monthly Price Paid
Prevacid 30MG: NDC 00300304613

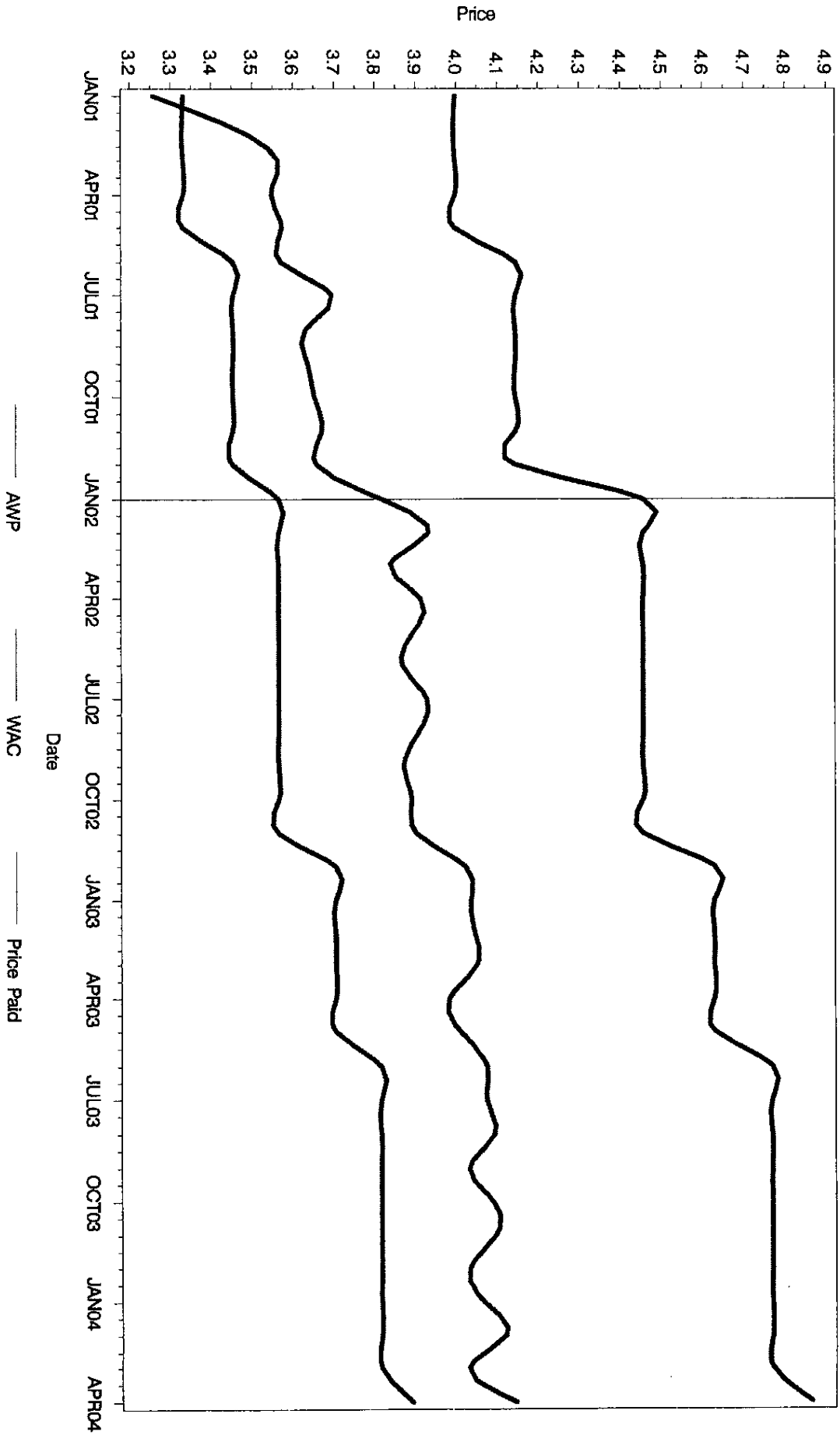


Figure 1h

Comparison of Price Paid/AWP and Price Paid/WAC
Prevacid 30MG: NDC 00300304613

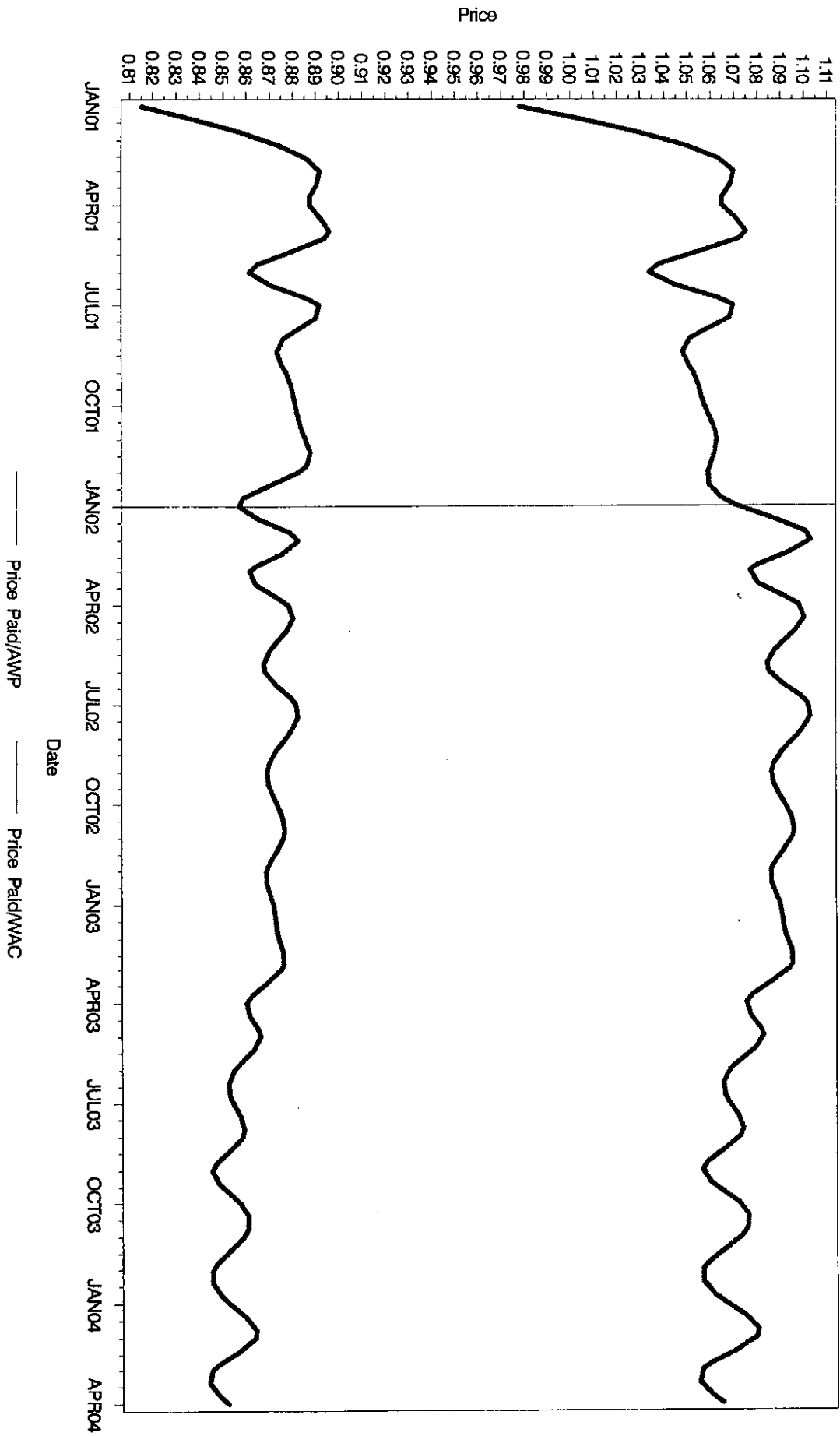


Figure 1i

Comparison of AWP, WAC, and Average Monthly Price Paid
Wellbutrin SR 150MG: NDC 00173013555

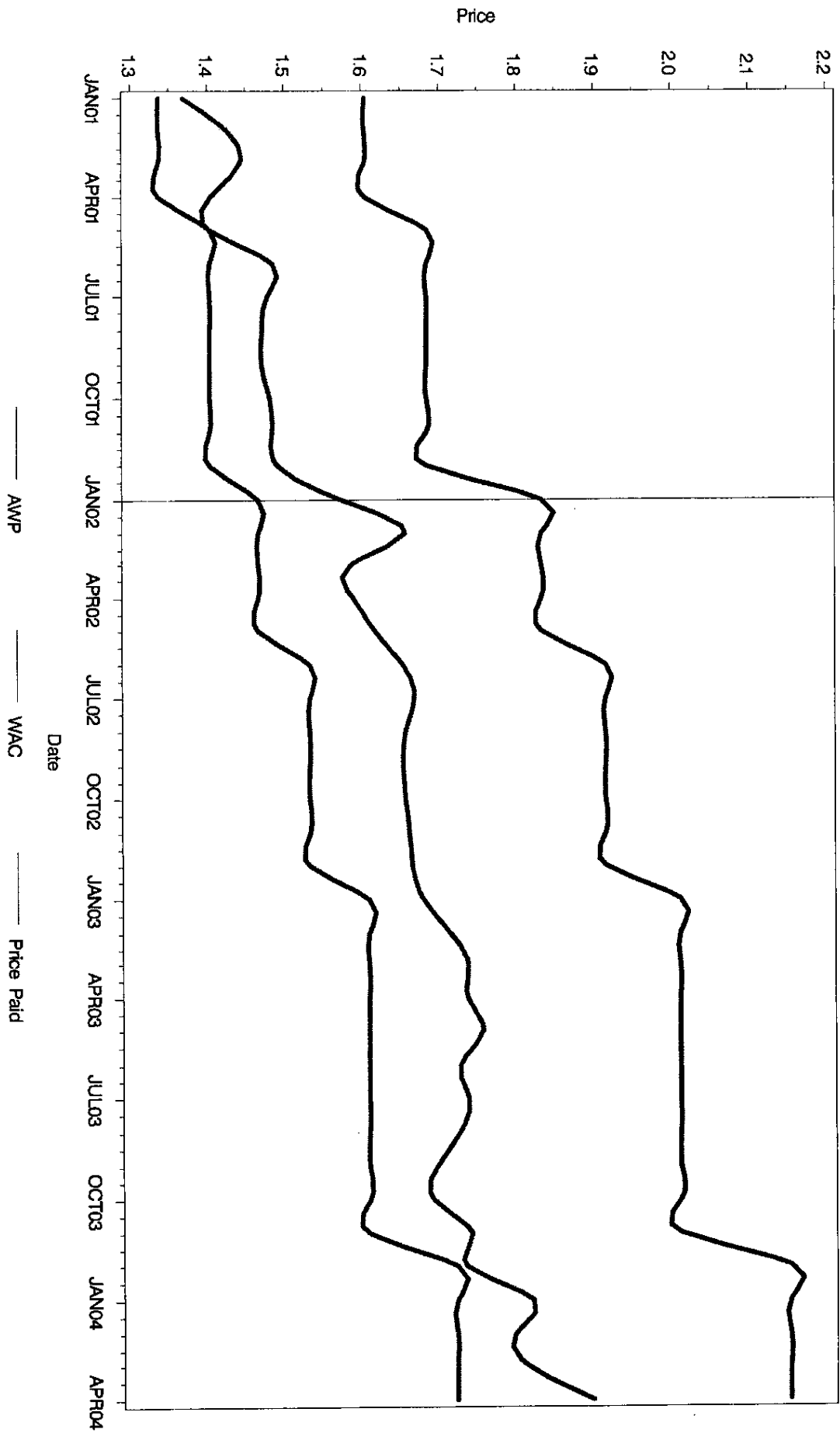


Figure 1j

Comparison of Price Paid/AWP and Price Paid/WAC
Wellbutrin SR 150MG: NDC 00173013555

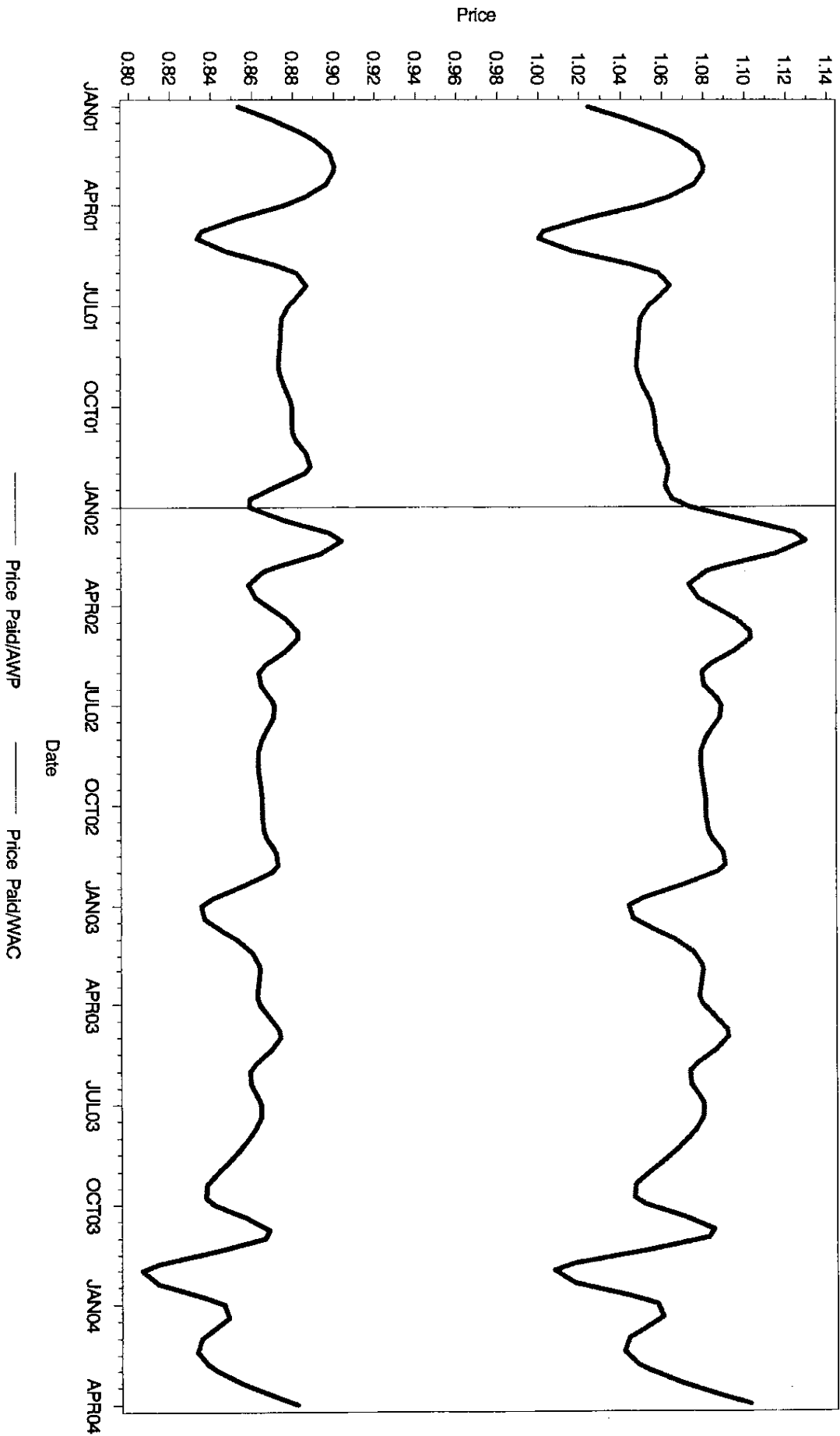


Figure 2a

Comparison of AWP, WAC, and Average Monthly Price Paid
Lipitor 10MG: NDC 00071015523

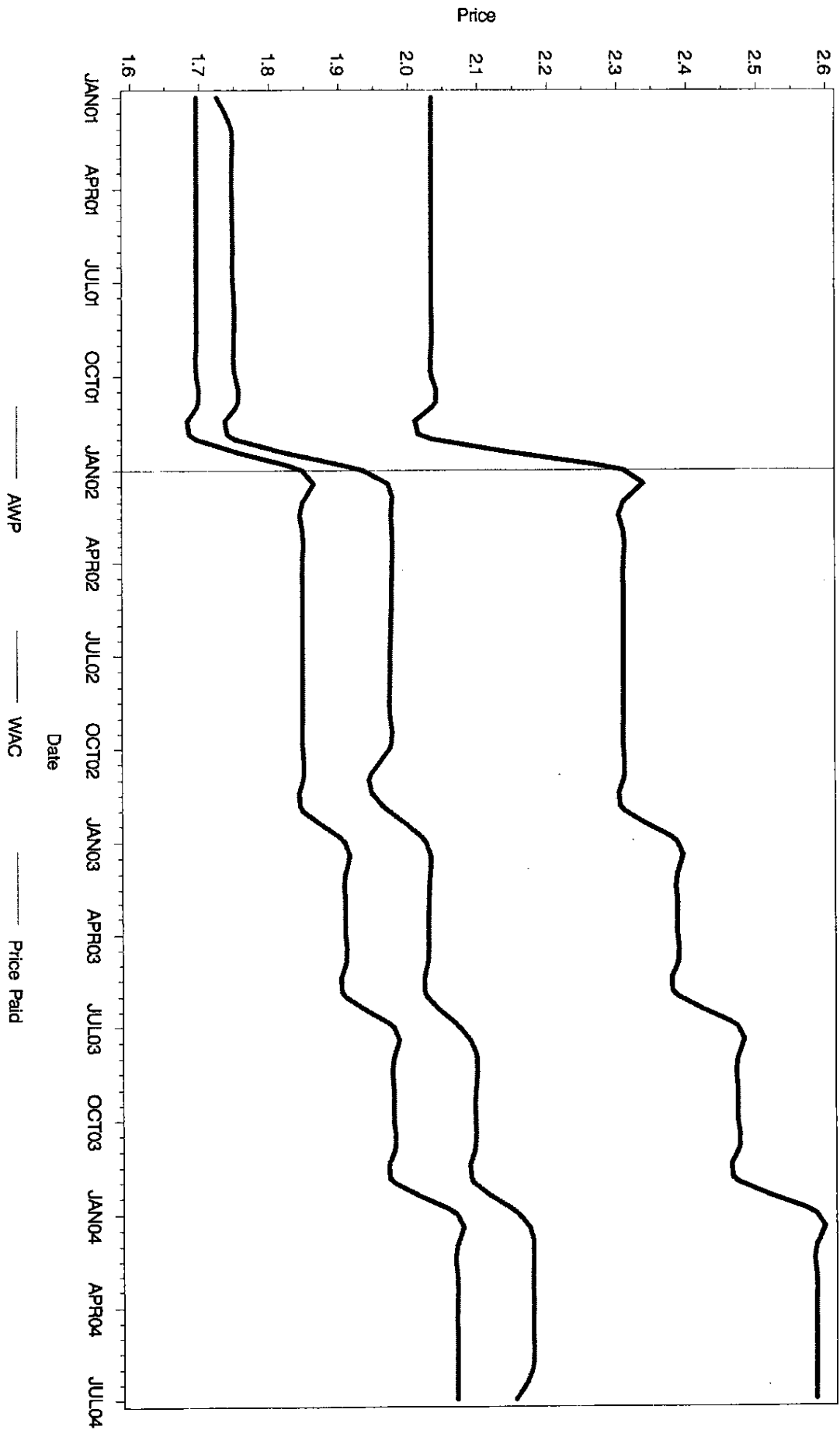


Figure 2b

Comparison of Price Paid/AWP and Price Paid/WAC
Lipitor 10MG: NDC 00071015523

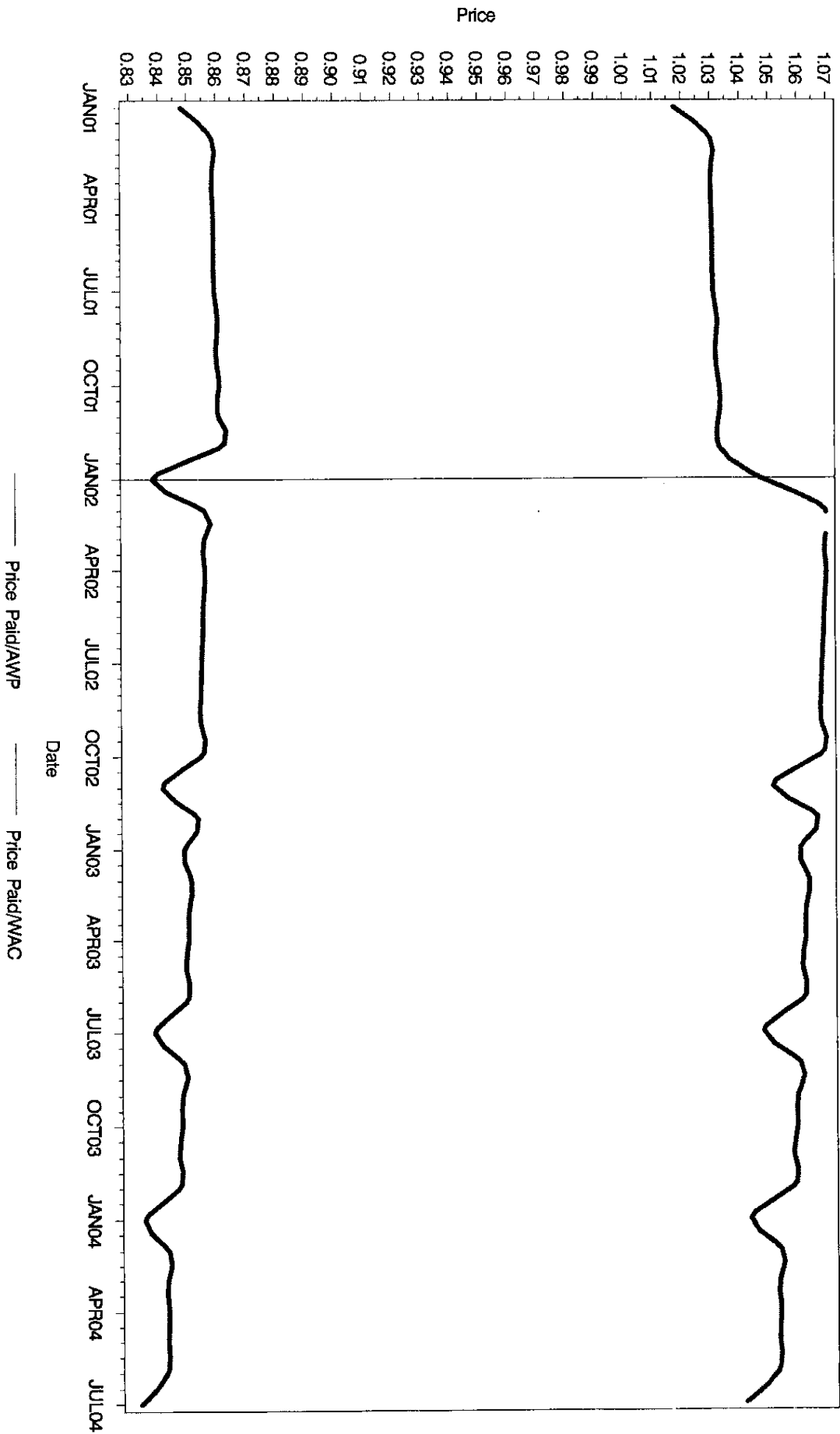


Figure 2c

Comparison of AWP, WAC, and Average Monthly Price Paid
Lipitor 20MG: NDC 00071015623

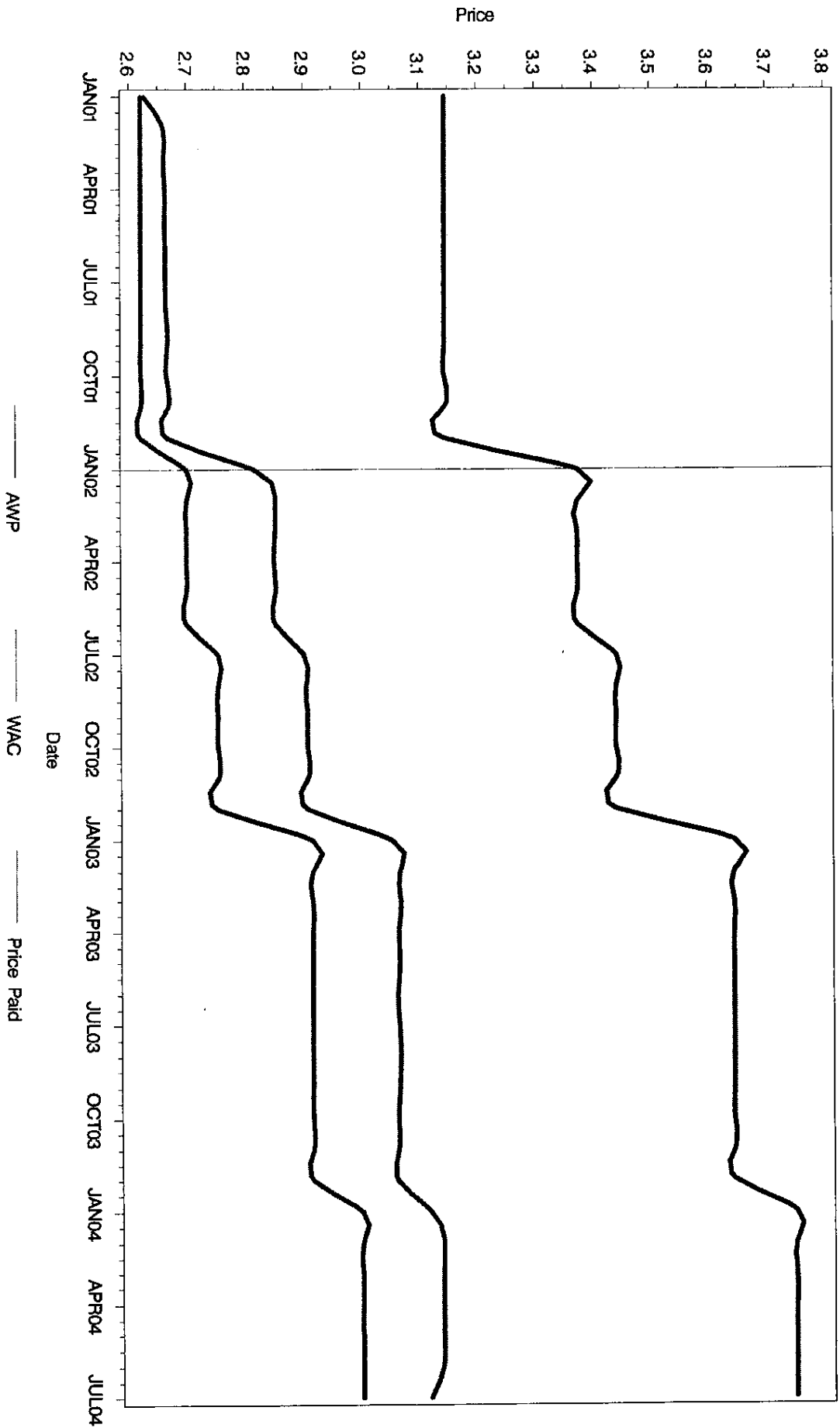


Figure 2d

Comparison of Price Paid/AWP and Price Paid/WAC
Lipitor 20MG: NDC 00071015623

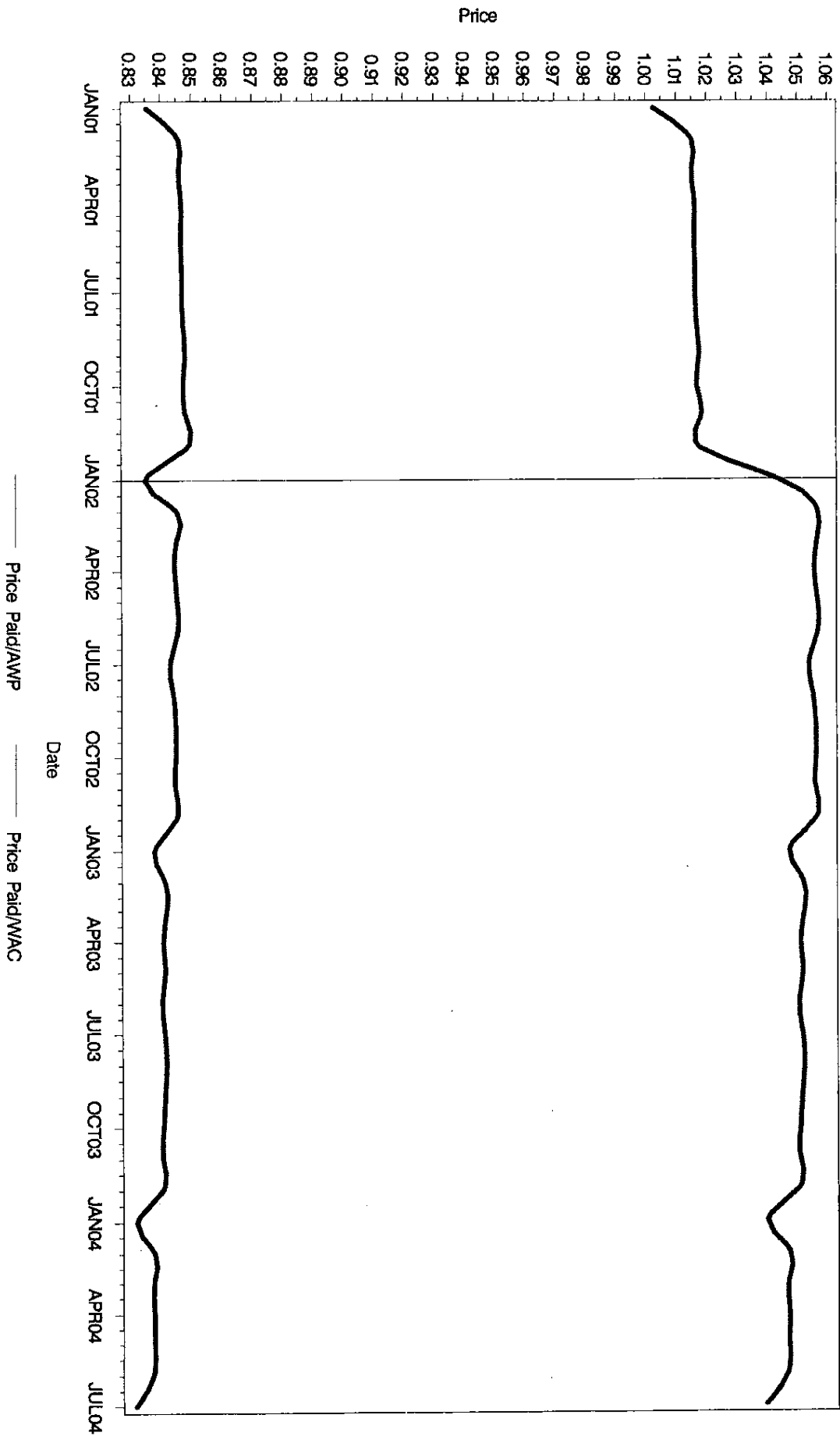


Figure 2e

Comparison of AWP, WAC, and Average Monthly Price Paid
Plavix 75MG: NDC 63653117101

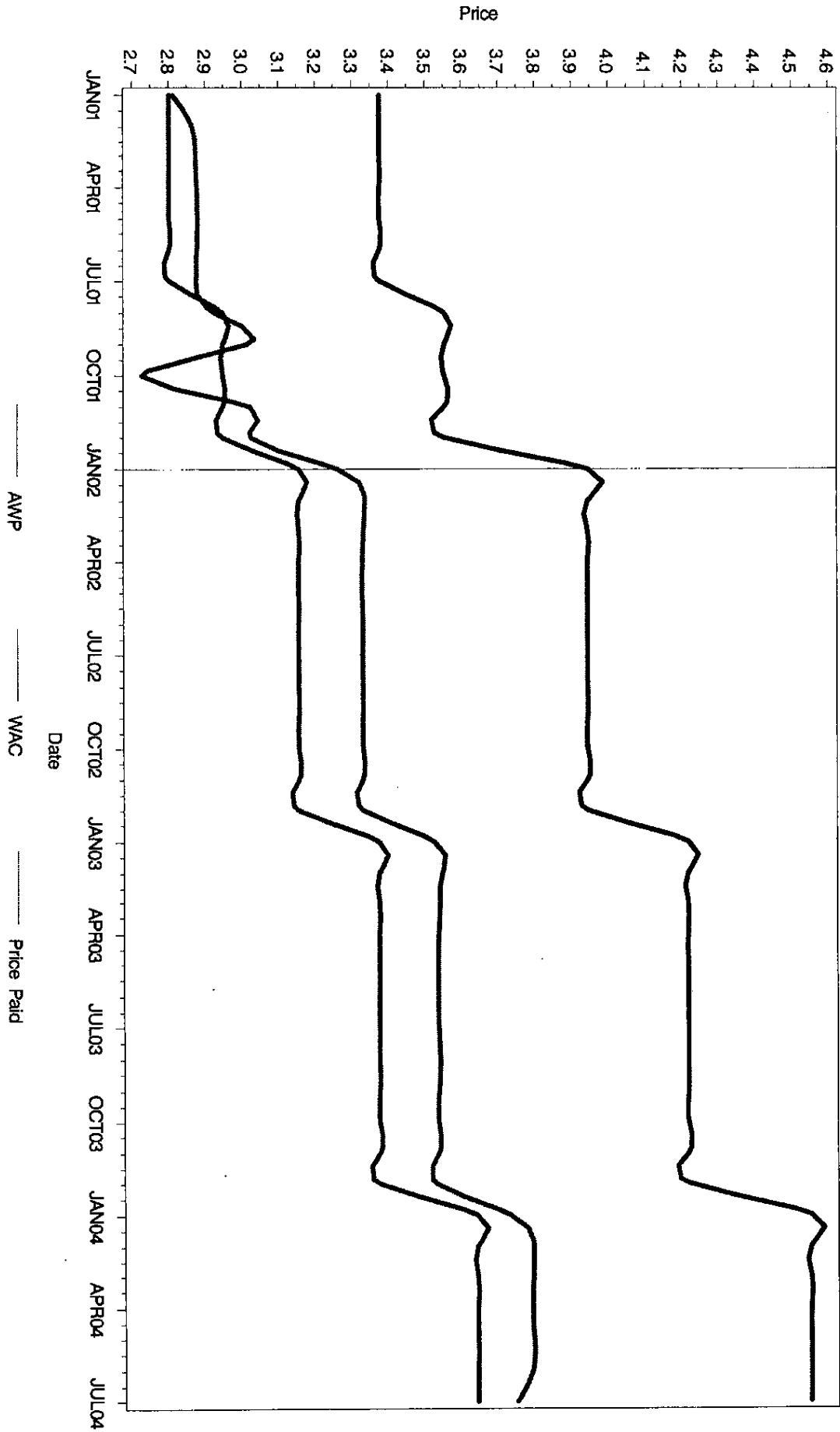


Figure 2f

Comparison of Price Paid/AWP and Price Paid/WAC
Plavix 75MG: NDC 63653117101

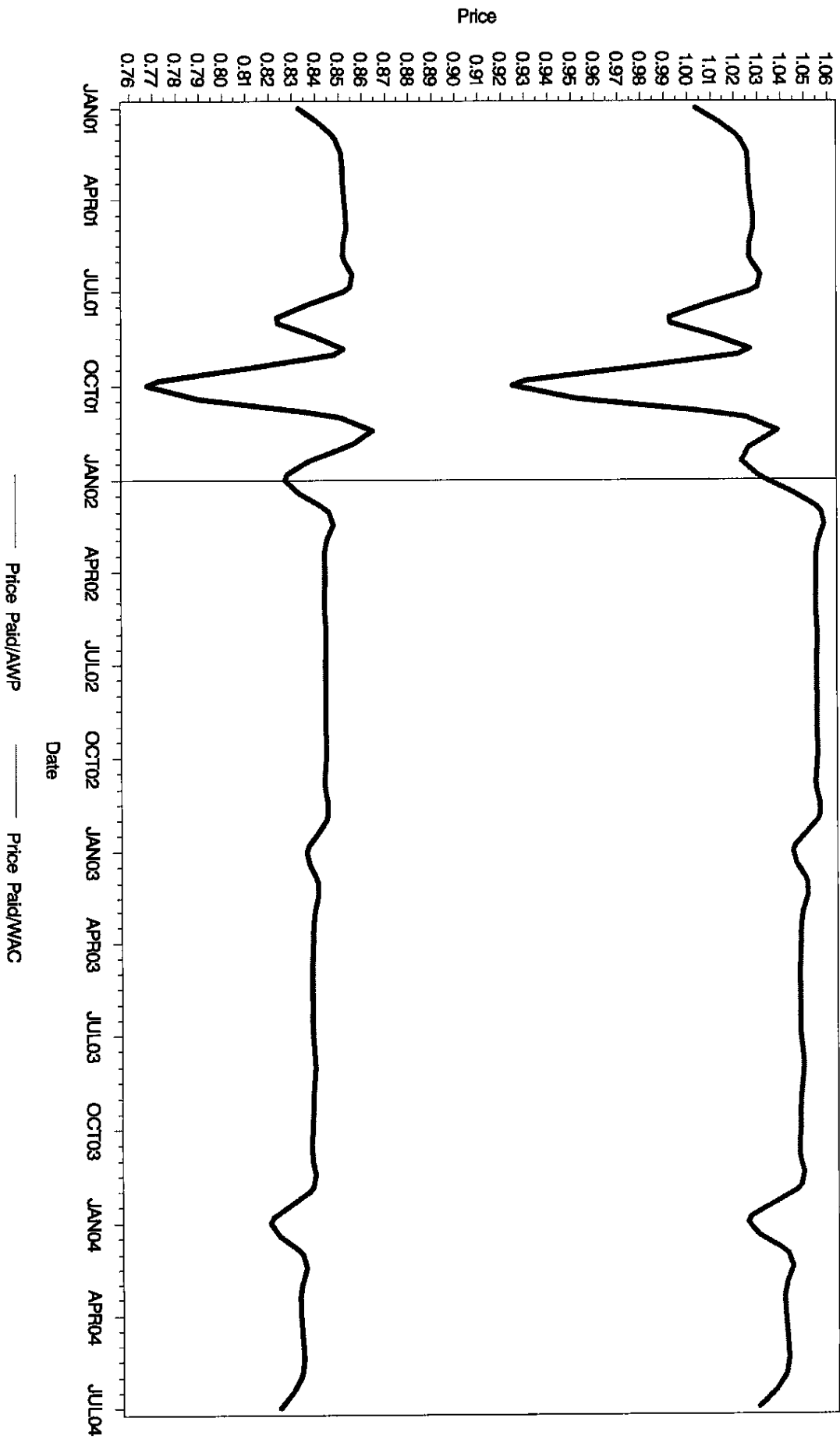


Figure 2g

Comparison of AWP, WAC, and Average Monthly Price Paid
Prevacid 30MG: NDC 00300304613

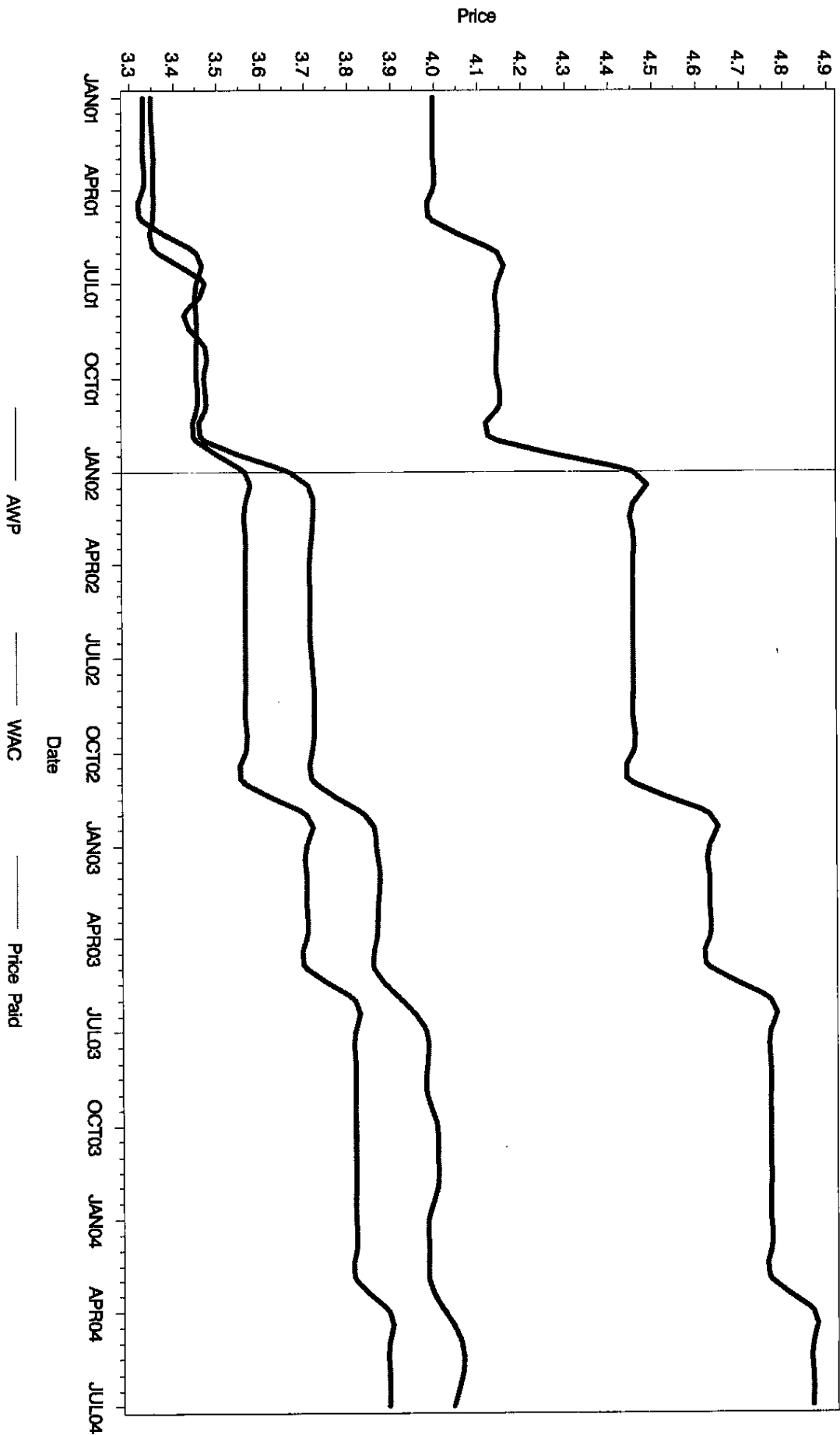


Figure 2h

Comparison of Price Paid/AWP and Price Paid/MAC
 Prevacid 30MG: NDC 00300304613

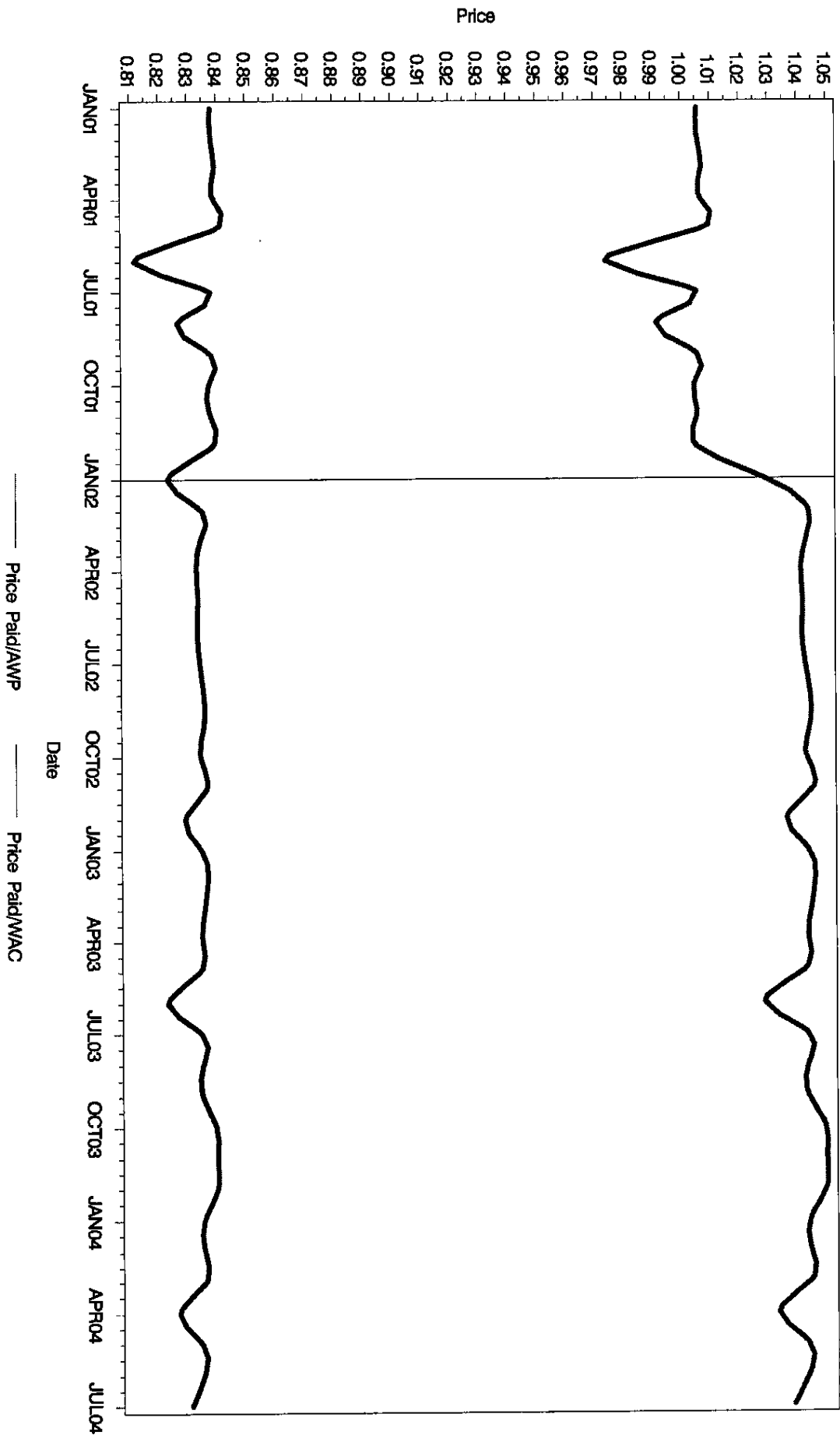


Figure 2i

Comparison of AWP, WAC, and Average Monthly Price Paid
Wellbutrin SR 150MG: NDC 00173013555

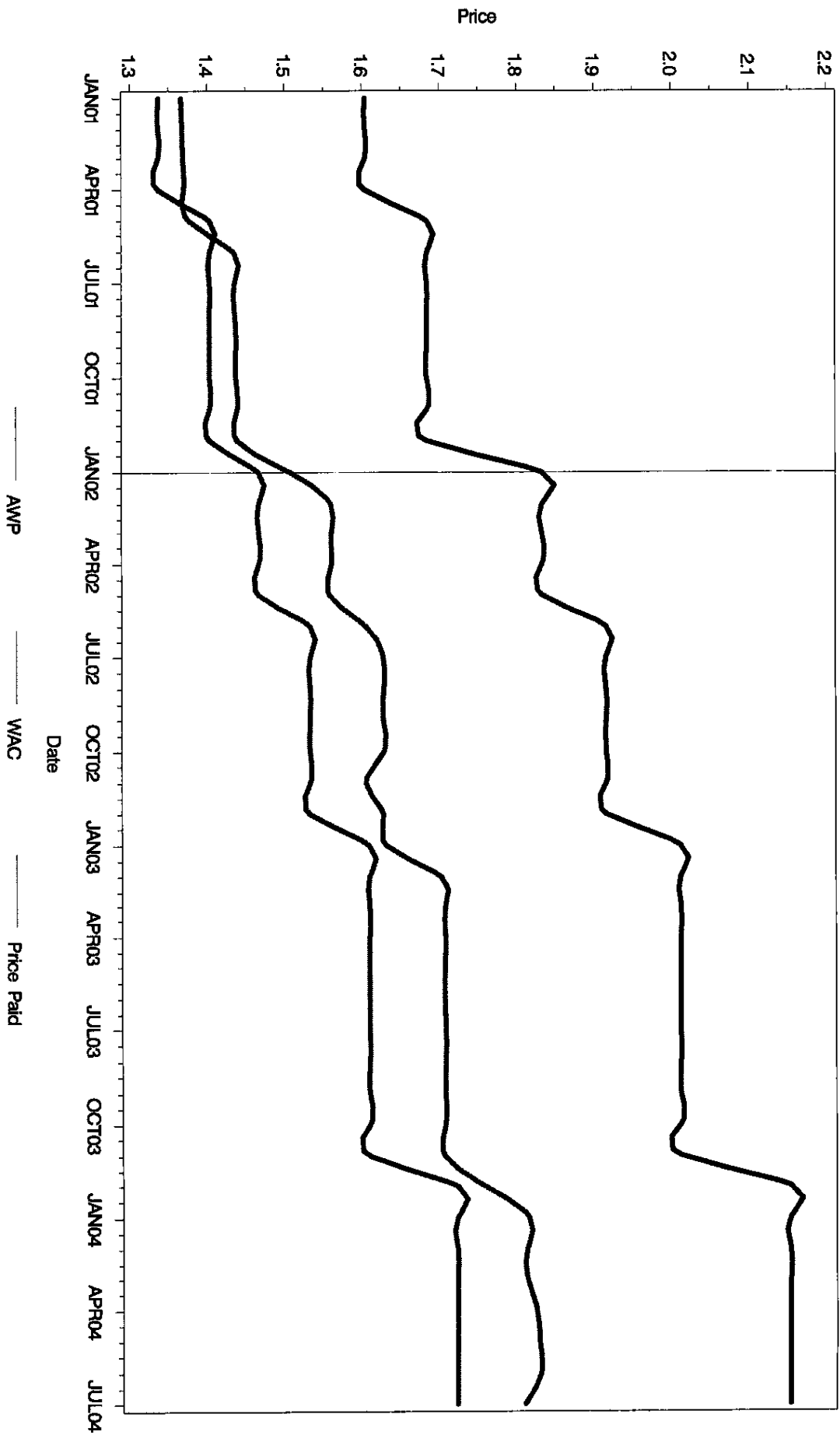
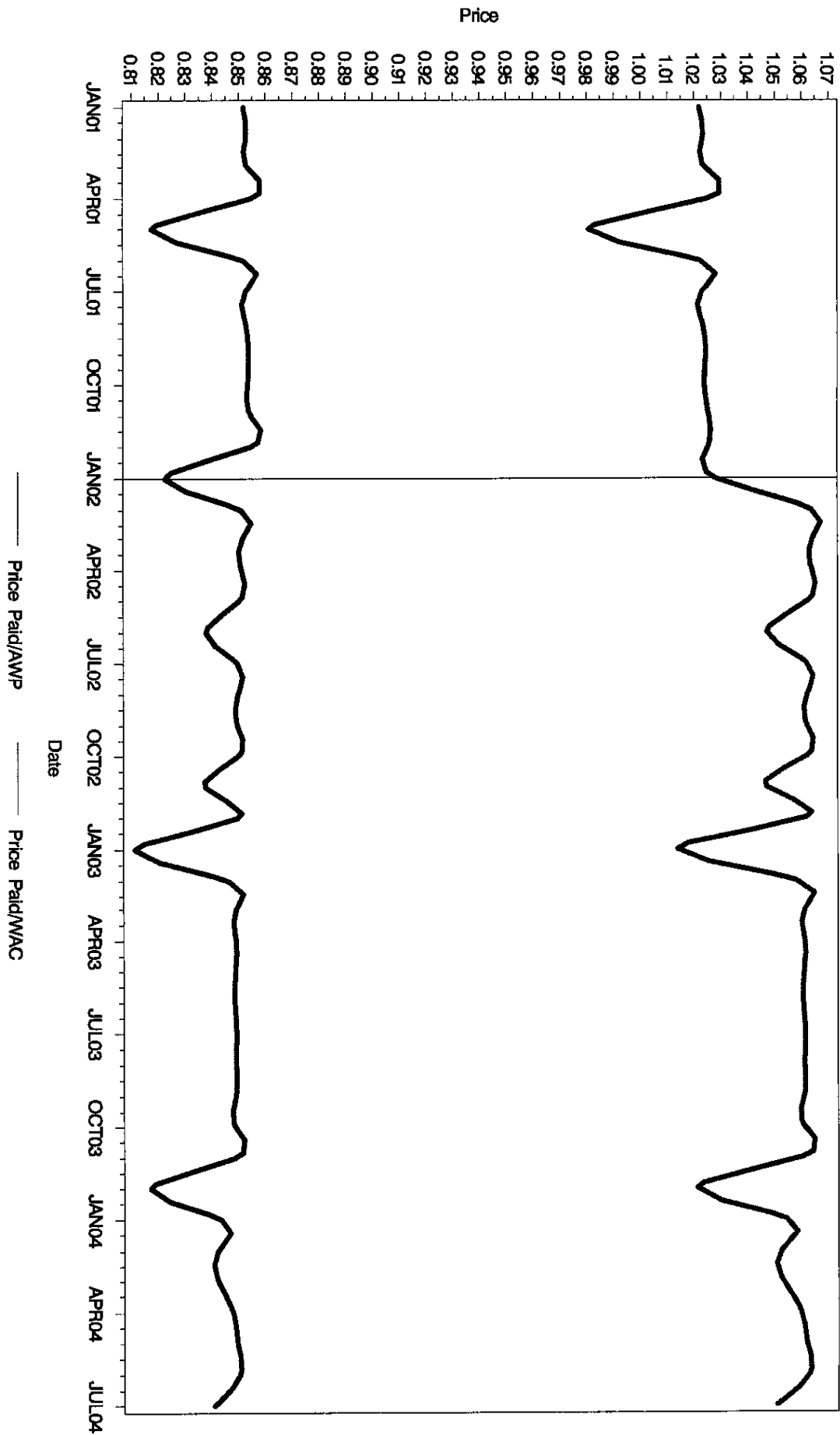


Figure 2j

Comparison of Price Paid/AWP and Price Paid/WAC
Wellbutrin SR 150MG: NDC 00173013555



[illegible]

Table 4
Average Monthly Discounts and Dispensing Fees

| Drug | NDC | Drug Label | Rank | Volume | Period | | | | Period | | | | Period | | | |
|------------|-------------|----------------------------|------|--------|--------|---------|---------|----------|----------|---------|---------|----------|----------|---------|---------|----------|
| | | | | | Bf | Average | Monthly | Discount | Period 1 | Average | Monthly | Discount | Period 2 | Average | Monthly | Discount |
| LIPITOR | 00071015523 | LIPITOR 10MG TABLET | | | | | | | Period 1 | Average | Monthly | Discount | Period 2 | Average | Monthly | Discount |
| LIPITOR | 00071015623 | LIPITOR 20MG TABLET | | | | | | | Period 3 | Average | Monthly | Discount | Period 4 | Average | Monthly | Discount |
| PLAVIX | 63653117101 | PLAVIX 75MG TABLET | | | | | | | Period 1 | Average | Monthly | Discount | Period 2 | Average | Monthly | Discount |
| PREVACID | 00300304613 | PREVACID 30MG CAPSULE DR | | | | | | | Period 3 | Average | Monthly | Discount | Period 4 | Average | Monthly | Discount |
| WELLBUTRIN | 00173013555 | WELLBUTRIN SR 150MG TAB SA | | | | | | | Period 1 | Average | Monthly | Discount | Period 2 | Average | Monthly | Discount |

Summary of Fully Interacted Regressions
Dr. Hartman

Table 5

| Counts of Drug/Dosages | | | | | | | | | |
|--|---------------------|----------|-------|-----------------|---------------------|----------|----------------|-----------------|--------|
| Weighted by Dollars | | | | | | | | | |
| OLS | | | | | | | | | |
| | Sign on Coefficient | | | Total | Sign on Coefficient | | | Total | |
| | Positive | Negative | Total | | Positive | Negative | Total | | |
| Not Significant | 76 | 109 | 185 | 82,797,353,000 | 43.3% | 32.2% | 61,587,612,000 | 144,384,965,000 | 75.5% |
| Significant | 32 | 61 | 93 | 19,215,339,000 | 10.1% | 14.4% | 27,569,154,000 | 46,784,493,000 | 24.5% |
| Total | 108 | 170 | 278 | 102,012,692,000 | 53.4% | 46.6% | 89,156,766,000 | 191,169,458,000 | 100.0% |
| White Corrected Standard Errors | | | | | | | | | |
| | Sign on Coefficient | | | Total | Sign on Coefficient | | | Total | |
| | Positive | Negative | Total | | Positive | Negative | Total | | |
| Not Significant | 68 | 81 | 149 | 67,154,245,000 | 35.1% | 22.1% | 42,306,766,000 | 109,461,011,000 | 57.3% |
| Significant | 40 | 89 | 129 | 34,858,447,000 | 18.2% | 24.5% | 46,850,000,000 | 81,708,447,000 | 42.7% |
| Total | 108 | 170 | 278 | 102,012,692,000 | 53.4% | 46.6% | 89,156,766,000 | 191,169,458,000 | 100.0% |
| PCSE Correction | | | | | | | | | |
| | Sign on Coefficient | | | Total | Sign on Coefficient | | | Total | |
| | Positive | Negative | Total | | Positive | Negative | Total | | |
| Not Significant | 73 | 88 | 161 | 71,473,808,000 | 37.4% | 24.5% | 46,830,925,000 | 118,304,733,000 | 61.9% |
| Significant | 35 | 82 | 117 | 30,538,884,000 | 16.0% | 22.1% | 42,325,841,000 | 72,864,725,000 | 38.1% |
| Total | 108 | 170 | 278 | 102,012,692,000 | 53.4% | 46.6% | 89,156,766,000 | 191,169,458,000 | 100.0% |

Summary of Fully Interacted Regressions

Table 6

| Counts of Drug/Dosages | | Weighted by Dollars | | OLS | |
|---------------------------------|-----------------|---------------------|----------|---------------------|-----------|
| | | Sign on Coefficient | | Sign on Coefficient | |
| | | Positive | Negative | Positive | Negative |
| Not Significant | Not Significant | 9 | 76 | 85 | 385,959 |
| Significant | Significant | 5 | 45 | 50 | 51,611 |
| Total | Total | 10.4% | 89.6% | 100.0% | 437,570 |
| Not Significant | Not Significant | 6.7% | 56.3% | 63.0% | 61.1% |
| Significant | Significant | 3.7% | 33.3% | 37.0% | 32.4% |
| Total | Total | 14 | 121 | 135 | 6,262,539 |
| Not Significant | Not Significant | 7 | 80 | 87 | 21.6% |
| Significant | Significant | 5.2% | 30.4% | 35.6% | 4,815,506 |
| Total | Total | 10.4% | 89.6% | 100.0% | 93.5% |
| White Corrected Standard Errors | | | | | |
| | | Sign on Coefficient | | Sign on Coefficient | |
| | | Positive | Negative | Positive | Negative |
| Not Significant | Not Significant | 7 | 41 | 48 | 349,043 |
| Significant | Significant | 5.2% | 30.4% | 35.6% | 5.2% |
| Total | Total | 10.4% | 89.6% | 100.0% | 437,570 |
| Not Significant | Not Significant | 5.2% | 30.4% | 35.6% | 23.5% |
| Significant | Significant | 5.2% | 59.3% | 64.4% | 70.0% |
| Total | Total | 14 | 121 | 135 | 6,262,539 |
| Not Significant | Not Significant | 7 | 80 | 87 | 4,690,411 |
| Significant | Significant | 5.2% | 30.4% | 35.6% | 23.5% |
| Total | Total | 10.4% | 89.6% | 100.0% | 93.5% |
| PCSE Correction | | | | | |
| | | Sign on Coefficient | | Sign on Coefficient | |
| | | Positive | Negative | Positive | Negative |
| Not Significant | Not Significant | 7 | 41 | 48 | 349,043 |
| Significant | Significant | 5.2% | 30.4% | 35.6% | 5.2% |
| Total | Total | 10.4% | 89.6% | 100.0% | 437,570 |
| Not Significant | Not Significant | 5.2% | 30.4% | 35.6% | 23.5% |
| Significant | Significant | 5.2% | 59.3% | 64.4% | 70.0% |
| Total | Total | 14 | 121 | 135 | 6,262,539 |
| Not Significant | Not Significant | 7 | 80 | 87 | 4,690,411 |
| Significant | Significant | 5.2% | 30.4% | 35.6% | 23.5% |
| Total | Total | 10.4% | 89.6% | 100.0% | 93.5% |

Summary of Fully Interacted Regressions

Table 7

| Counts of Drug/Dosages | | | | | | | | | |
|---------------------------------|---------------------|----------|-------|---------------------|---------------|---------------|---------------------|----------|--------|
| Weighted by Dollars | | | | | | | | | |
| OLS | | | | | | | | | |
| | Sign on Coefficient | | | Sign on Coefficient | | | Sign on Coefficient | | |
| | Positive | Negative | Total | Positive | Negative | Total | Positive | Negative | Total |
| Not Significant | 62 | 204 | 266 | 393,793,833 | 2,475,567,172 | 2,869,361,005 | 91.0% | 78.5% | 91.0% |
| Significant | 20 | 80 | 100 | 29,528,503 | 254,409,341 | 283,937,844 | 9.0% | 8.1% | 9.0% |
| Total | 22.4% | 284 | 366 | 423,322,336 | 2,729,976,513 | 3,153,298,849 | 100.0% | 86.6% | 100.0% |
| White Corrected Standard Errors | | | | | | | | | |
| | Sign on Coefficient | | | Sign on Coefficient | | | Sign on Coefficient | | |
| | Positive | Negative | Total | Positive | Negative | Total | Positive | Negative | Total |
| Not Significant | 61 | 103 | 164 | 386,419,847 | 1,276,870,300 | 1,663,290,147 | 52.7% | 40.5% | 52.7% |
| Significant | 21 | 181 | 202 | 36,902,489 | 1,453,106,212 | 1,490,008,702 | 47.3% | 46.1% | 47.3% |
| Total | 22.4% | 284 | 366 | 423,322,336 | 2,729,976,513 | 3,153,298,849 | 100.0% | 86.6% | 100.0% |
| PCSE Correction | | | | | | | | | |
| | Sign on Coefficient | | | Sign on Coefficient | | | Sign on Coefficient | | |
| | Positive | Negative | Total | Positive | Negative | Total | Positive | Negative | Total |
| Not Significant | 59 | 105 | 164 | 387,807,027 | 1,257,934,846 | 1,645,741,873 | 52.2% | 39.9% | 52.2% |
| Significant | 23 | 179 | 202 | 35,515,309 | 1,472,041,667 | 1,507,556,975 | 47.8% | 46.7% | 47.8% |
| Total | 22.4% | 284 | 366 | 423,322,336 | 2,729,976,513 | 3,153,298,849 | 100.0% | 86.6% | 100.0% |

Table 8

Stacked Regression

The REG Procedure
 Model: MODEL1
 Dependent Variable: NetPrice_AWP_Out

Number of Observations Read 4590

Number of Observations Used 4590

| Analysis of Variance | | | | |
|----------------------|--------------|-----------------------|-------------------|-----------------|
| Source | Sum of DF | Mean Squares | F Value | Pr > F |
| Model | 1 | 0.28244 | 0.28244 | 116.76 <.0001 |
| Error | 4588 | 11.09862 | 0.00242 | |
| Corrected Total | 4589 | 11.38107 | | |
| Root MSE | | | | |
| Root MSE | 0.04918 | R-Square | 0.0248 | |
| Dependent Mean | 0.88366 | Adj R-Sq | 0.0246 | |
| Coeff Var | 5.56591 | | | |
| Parameter Estimates | | | | |
| Variable | DF | Parameter Estimate | Standard Error | t Value Pr > t |
| Intercept | 1 | 0.89766 | 0.00148 | 604.66 <.0001 |
| Trend | 1 | -0.00079957 | 0.00007400 | -10.81 <.0001 |

Table 9
Stacked Regression

The REG Procedure
Model: MODEL1
Dependent Variable: NetPrice_AWP_Out

Number of Observations Read 13542
Number of Observations Used 13542

| Analysis of Variance | | | | | | |
|----------------------|---------------------------|-----------------------|-------------------|---------|---------|--|
| Source | Sum of Mean Squares | DF | Squares | F Value | Pr > F | |
| Model | 1 | 0.13179 | 0.13179 | 53.49 | <.0001 | |
| Error | 13540 | 33.35818 | 0.00246 | | | |
| Corrected Total | 13541 | 33.48997 | | | | |
| | | | | | | |
| Root MSE | 0.04964 | R-Square | 0.0039 | | | |
| Dependent Mean | 0.85225 | Adj R-Sq | 0.0039 | | | |
| Coeff Var | 5.82402 | | | | | |
| | | | | | | |
| Parameter Estimates | | | | | | |
| Variable | DF | Parameter Estimate | Standard Error | t Value | Pr > t | |
| Intercept | 1 | 0.85781 | 0.00087065 | 985.24 | <.0001 | |
| Trend | 1 | -0.00029218 | 0.00003995 | -7.31 | <.0001 | |